

# **EXCAVATIONS**

## **AT THE**

## **CASTILLO**

## **DE SAN**


## **MARCOS**



Kathleen Deagan  
Florida State University  
1980



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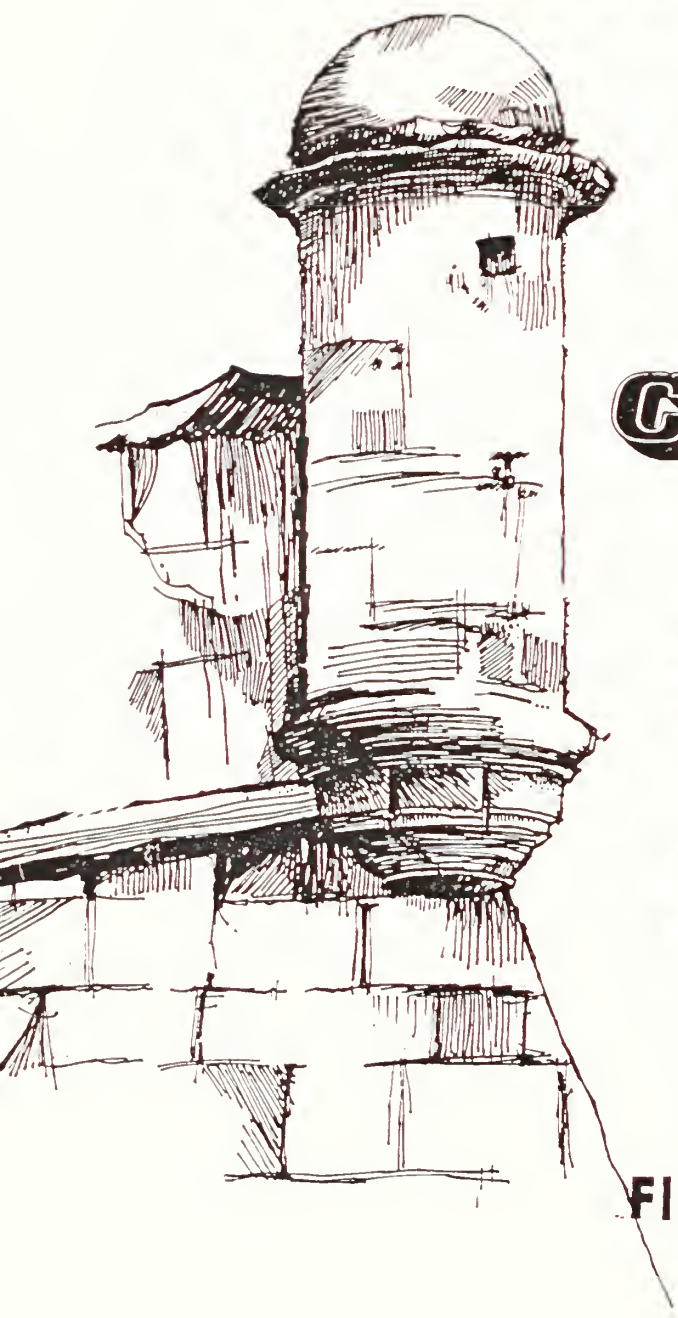
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CASA 6637





Excavations at the Castillo de San Marcos  
St. Augustine, Florida:  
Archeological Data in Support  
of Architectural Stabilization

Kathleen Deagan  
Florida State University  
December 1980

1390

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Center  
Tallahassee, Florida  
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## Preface

The work reported here was supported by National Park Service contract CX 5000090739 , and also by the Florida State University Anthropology Department.

This report deals with only a single part of the archeological data from the excavations at the Castillo de San Marcos, that concerning the Fort's architectural conditions and evolution. As the introductory section illustrates, there were several other emphases than architectural interpretation in the archeological investigation of the site; however the primary funding agency goals were those related to stabilization and architecture. It was for this reason that the present reporting format consisting of two reports was selected; these include one dealing with architectural investigations, and one concentrating upon those problems of primary interest to the anthropological and archeological communities (Williams n.d.). The latter also integrates the results of the zooarcheological analysis of food remains from the site.

The separation of these foci took place only in the preparation of this report, since the research design, excavation strategies, contextual and material analyses all simultaneously incorporated those data categories necessary for both architecturally and anthropologically oriented interpretations. During all of these phases of the project, a number of people were instrumental in its successful completion. Maurice Williams, FSU graduate student, was the overall field supervisor for the entire project,





and maintained the control and recording systems which allowed our interpretations to be made. George Fischer, NPS contracting officer for the project, was actively involved in all phases, and we are very grateful for his time and trouble shooting, and particularly for his role in coordinating the problems and needs of the archeologists, architects and park management personnel.

We owe Luis Arana a special thanks, for unstinting contributions of his time and his knowledge about the Castillo. Many difficult points of interpretation were resolved in consultation with Luis Arana.

The archeological work at the Castillo would have been impossible had it not been for the cooperation and help of the Park staff. Overall support and logistical advice were provided by Robert Amdor and George Schesventer; and help with the daily logistical and technical problems of working at a major tourist attraction was freely given by the maintenance staff and Park interpreters at the Castillo. The humor and friendliness of the rangers and maintenance staff additionally did much to make our work at the Castillo pleasant.

Assistance in preparing tables for this report was provided by Maurice Williams and Julia King, and illustrations were done by James Quine.



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## Introduction

The Castillo de San Marcos National Monument, in St. Augustine, Florida, is architecturally, culturally and historically unique. As the symbol of Spanish presence in North America for more than two centuries, and as the site of more than 750,000 visitors each year; it's preservation and maintenance and interpretation are of the utmost importance.

The 1979 archeological project at the Castillo was carried out by the Florida State University Field School between April 1, 1979 and August 23, 1979, under the direction of the author. The fieldwork was supervised by Maurice Williams of Florida State University. The project was done in conjunction with, and under contract to, the Southeast Archeological Center of the National Park Service; as part of a large multi-disciplinary project coordinated by the Denver Service Center, NPS. This included historians, structural engineers and architects; each of whom will be assessing and reporting the data for their portions of the project.

The archeological portion was carried out with objectives on several levels, including architectural stabilization impact mitigation, historic structure report needs; Park management needs; and relevant anthropological and scientific issues. In all cases, the excavation was planned with project architects in order to recover the minimal amount of data from each excavation area with which both the stabilization impact and historic structure report needs could be met. While no excavation

primarily oriented around gathering interpretive or anthropological data was done; such data was recoverable and recovered from all areas; and whenever at all possible; excavation was planned to incorporate this data.

Because of this multi-level nature of the project, the research design (Deagan 1979) and reporting are also multi-level. The stabilization requirements for the fort were observed and analyzed on site by the project architect, Craig Frazier, of the NPS Denver Service Center, and the assessment of the need for stabilization will be included in his report. Anthropological issues to which the excavations were pertinent are discussed below, and the application of the cultural remains and distributions at the Castillo to these problems can be found in the report by Williams (in prep: n.d.), which is an M.A. thesis from Florida State University which concentrates on those aspects of the excavation and the Castillo which are not of direct relevance to the stabilization program, but which are of considerable importance to the anthropological community.

This report will concentrate on synthesizing and presenting the field and architectural data; and dealing with the historic structure report needs, some stabilization needs, and Park management needs addressed by the archeological project.

The continuing desire for a stabilization program at the Castillo was in response not only to the need for preserving a unique historic site, but also to the increasing structural problems at the monument. These problems have been outlined



in the Denver Service Center (NPS) Task Directive for the Castillo de San Marcos, and include:

1. Structural decay of plaster and masonry in the fort which require extensive assessment and preservation.
2. Major cracks in the scarp walls which suggest the need for foundation investigation and stabilization.
3. Decay of interior elements such as plaster walls, tabby floors, paint and 17th through 19th century wall graffiti.
4. The terreplein non-historic wear coat cover does not protect the casemates below from water, and this poses problems of water damage to the rooms.
- 5 The coquina stone, of which the fort is built, is fragile and subject to rapid deterioration through the agents of weather and human visitors.
6. In addition to all of the major problems, many now-minor problems require attention. These include wood decay, lime leaching from tabby and a deteriorating shot furnace.

#### Significance and Historical Background of the Castillo

It should be pointed out that the historical background data on the Castillo is a separate part of the project, being carried out through the Denver Service Center. Unfortunately, this portion of the project was not completed prior to the archeological portion; and the complete report on Castillo history has not been provided to the archeologists at the time of the final preparation of this manuscript. For this reason, it is highly likely that some inconsistencies in interpretation may be found between the archeological and historical data

sections; and the archeological section may well be incomplete in its assessment and interpretation of disturbances, alterations and sequences in the historic fabric of the fort.

A cartographic survey, and a limited historical survey were carried out independently by the archeological team. Our primary source was Mr. Luis Arana, Park Historian at the Castillo, who provided us with copies and keys to relevant maps (Appendix 1) to documentary sources; and with large amounts of his time. Secondary sources included Arana and Manucy (1977), Chatelaine (1941) and Arana (1967).

The significance of the Castillo de San Marcos can be seen architecturally, historically, culturally and militaristically. Built in 1672, it is the oldest masonry fortification in North America and is a clear example of the development and adaptation of 17th century European military architecture to New World conditions.

The construction material of the fort, coquina shell rock, is also unique, and the Castillo is the oldest such structure in what was Spanish Florida (founded in 1565). St. Augustine, the military and religious headquarters for Spain in eastern North America, was a government-subsidized, Spanish military outpost until the end of the first Spanish period (1565-1763). As such, the community was made up almost entirely of military personnel and their families, and was dominated by the Castillo and the military system. In few other colonies of the Spanish New World did life revolve so completely around the military sub-system as it did in Spanish Florida. For this reason, the

Castillo is an important and unique site not only as a rare example of 17th century military architecture; nor only as ancient coquina structure; nor only as the symbol of 235 years of Spanish presence in North America; but also as the single most pervasive aspect of colonial community life in the nation's oldest city.

The Castillo has captured the attention of architects, historians, military scholars and anthropologists concerned with the processes of community interactions and adaptations.

The Castillo de San Marcos was the last of nine Spanish forts built in St. Augustine between 1565 and 1676; and the last of seven forts built on its present location. It functioned as a buffer to British encroachment to the north, particularly after the founding of Charleston in 1670. It was also an important defense and relief station for the Spanish treasure fleet and its frequent wreck victims.

Construction was begun on the coquina fort in 1672, and completed by 1695. The Castillo successfully withstood British sieges in 1702 and 1740. In 1738 major modifications began, during which the bombproof arched casemates were constructed, and the courtyard was made somewhat smaller (see Arana and Manucy 1977). In 1763 Spain ceded Florida to England, and from 1775 until 1781 the Castillo was the British military headquarters in Florida. During this time it served as a loyalist prison. From 1784 until 1821, Florida was once again a Spanish colony, and in 1821 was ceded to the United States by Spain. During the 19th century the Castillo served

principally as a prison, and from 1898 until the present it has been preserved as a historic structure by the War Department and National Park Service.

#### Previous Archeological Research and Resulting Data

Little controlled archeological investigation has been carried out at the Castillo de San Marcos. That work which has been reported is listed in the bibliography, and is summarized in the archeological research section of the draft Historical Resource Management Plan prepared by the National Park Service Southeast Archeological Center (Fischer 1976).

Some of the earliest controlled archeological work at the Castillo was carried out by Mr. Jack Winter, through the Carnegie Foundation of Washington (Winter 1937). Much of this work's data has been incorporated into Chatelaine (1941). Winter excavated portions of the City moat (adjacent to the Cubo line, on Castillo grounds); a portion of the west glacis at the west end of the south covered way; and also a portion of the Cubo redoubt at a point halfway between Malaga and Riberia Streets on Orange Street.

This work resulted in a definition of the nature of the town's early defenses, including the Cubo redoubt. Of most relevance to the present study, however, was the glacis excavation. The results of the work are discussed in the section dealing with the 1979 glacis excavation, since Winter's work extended the data that was recovered then.

Between 1939 and 1960, several reports on construction activities at the Castillo were prepared by Albert Manucy

(1939, 1940, 1953, 1960), and contain information relevant to archeological concerns. Of particular interest is the 1960 "Colonial Floors" report, which discusses excavations in the guardroom and sally port areas, and which offers information about floor construction, sequence and grades in the post-1738 Castillo. Specific data from this study is included with the sections dealing with the 1979 interior Castillo excavations.

Manucy's 1940 report on relative depths of the moat through the history of Fort Marion provided information on moat construction, and on changing sea level and moat base elevations.

In 1941, Thor Borrensen carried out a series of investigations to examine the foundations of the fort (Borrensen 1941) and the moat. These took place in the northwest (St. Paul's) Bastion; in the south moat at 25 feet west of the drawbridge; in the "file" room (now the interpreter's office), and in the water battery. Borrensen and Manucy revealed the configuration and depths of the fort's foundation system which was completely consistent with that observed during the 1979 excavation (see below). Data on movement of water in the moat was also recovered, as well as an assessment of its impact on the fabric of the foundation in the south moat. The impact of continuous water flow had resulted in a fault or space under the foundation at the moat. This situation was not present in the east battery due to the protection afforded by the fill.



In 1955, Harrington, Manucy and Griffin published the results of their courtyard excavations. Structures dating to before the 18th century renovations were located, a pre-Castillo aboriginal component was identified, and the colonial grade at about 1738 was established (ca. 10.25' MSL). This study also provided the first stratigraphically controlled collection of material culture elements from the Castillo.

Investigations of the defense line system took place in 1963 with John Griffin's excavation of the Cubo defense line, resulting in its subsequent partial reconstruction. The final archeological work in the Castillo took place in 1973 when the courtyard well was excavated by Thomas Padgett.

The material culture collections at the Castillo were analyzed, organized and assessed in 1975, and were revealed to have little archeological research potential (Deagan 1975).

Relatively little has been learned about the Castillo from the archeology done between 1935 and 1975. The nature of the floors and their elevations in the guardroom has been determined, the presence and location of pre-1738 and pre-1756 structures in the courtyard have been confirmed; the presence of a pre-Castillo aboriginal component has been determined, a suggestion of the range of the material culture of the Castillo has been offered, and the presence of wooden platform furniture in the guardroom has been established. Additionally, the nature and construction details of the defense works have been learned, and the nature and condition of the south foundation and moat have been investigated.

## 1979 Project Scope

Many questions remain about the Castillo which can be answered through archeology. Many of these are of interest to anthropologists, to historians, to educators and to scholars; although these questions are not necessarily of interest to a stabilization project. The following sections will discuss the scope of work carried out under the stabilization project, and discuss those specific questions which can be answered through those excavations which are justifiable through stabilization needs. Other anthropological, historical, architectural and interpretive questions (answerable through archeology) will be identified. These questions have been integrated into the research design when feasible, through the stabilization project, and are the subject of the report by Williams.

The primary concern of this project is with data relating to stabilization and historic structure needs. Some of the questions relating to needs of management and interpretation have been inadvertantly answered in the course of answering questions relating to needs for stabilization and the historic structures report, and are therefore included as elements of this phase of the project. Data needed for stabilization includes information concerning the foundation conditions and configurations in many areas; the moisture levels of sub-surface features and deposits; and the condition of exterior fort foundations as suggested by cracks in the scarp face. Information concerning the nature and conditions of wall footings, wood pilings below the fort, presence of sub-surface features



in the ravelin, and the sub-surface moat walls is also required for stabilization purposes.

Historic Structure Report needs include a delineation of the number and location of floors, their grades and their composition; the location of the pre-1738 floor plan and particularly the courtyard walls; the historic position of doorways and partition walls through the evolution of the Castillo; the location of interior wells, and other earlier features; and the presence, locations and nature of built-in furniture in the Castillo rooms.

Management and interpretive needs include information about the functions of the various rooms in the Castillo; the functions of such built-in features as the platforms in rooms 1 and 14; information about activities in the fort, and examples of material culture assemblages typical of the various periods of fort occupancy.

There are also several data areas within the Castillo that can be investigated through the excavations required to meet the needs of stabilization and the Historic Structures Report. These data areas include:

1. Those elements of material culture and its patterning which can be considered "typical" or characteristic of a hispanic military site. The question of interest here is the degree to which this pattern is different from or similar to those patterns found in the domestic community of 18th century St. Augustine, and to those found on military sites elsewhere in North America (see South 1977).

2. A gauge of the extent to which non-hispanic elements (Indian, British, French) are present in the Castillo. As the center of activity in the hispanic town, and as the official locus of government power, it is to be expected that the Castillo may provide a baseline of "hispanic" affiliation within the culturally heterogeneous St. Augustine community. This could provide a measure against which the hispanic affiliation of various ethnic groups in the community might be gauged.
3. The possible location of pre-1672 fort remains, and the cultural materials associated with them.
4. A delineation of the day-to-day activities of which took place in a hispanic military fortress.
5. The changes apparent in all of the above data areas, as correlated with the changes in cultural occupation of the Castillo. These questions are addressed in Williams (n.d.).

While it is an explicit premise of the research design that the data needs outlined above are to be approached with the highest priority given to, and justification stemming from the needs of stabilization, certain specific points about archeological research at the Castillo (taken from Fischer 1979) should be made:

"First, in the course of archeological investigation it will be necessary to destroy the archeological data. Careful consideration should therefore be given to recovering data in such manner and by such means that all questions that could conceivably be asked now or in the future will be answerable from the data. An acceptable research design must therefore involve matters beyond those specifically required for stabilization.

"Second, the stabilization work to be conducted on the Castillo will make archeological resources in some cases inaccessible within a reasonable and foreseeable future. Efforts must

therefore be made at the time that this information is available to answer certain questions we can foresee will eventually be asked.

"A further consideration must be made, particularly in terms of the present needs. The Castillo is part of the larger site; St. Augustine itself, which relates to the Colonial history of change and development in western civilization. Ultimately, the social, cultural and political changes which lead from the Castillo to 20th century America are the anthropological fabric of the Castillo de San Marcos."  
(Fisher 1979:4-5).

The following sections will discuss and assess the excavations in each area of the Castillo, with a summary of results relevant to stabilization and the Historic Structures Report included at the end.

### Methods and Controls

Excavation took place for 9 weeks during the spring term with an 8 person crew, and 9 weeks during the summer term with a 4-5 person crew. 5 days were lost during the spring term due to rain, and 4 were lost during the summer term. During this time all materials recovered were washed, identified, catalogued and tabulated, in addition to being excavated.

It should be noted that a not inconsiderable amount of work time was lost due to the logistics of working at a widely disparate (areally) site which functions as a major tourist attraction. In order not to muddy the Castillo grounds, it was necessary to build two stepped containment tanks into which the screens were placed, and which held the mud resulting from water screening. The water itself was channelled off into the moat. For each area of excavation, this system had to be dismantled, moved and rebuilt. Security problems required the transport of all equipment inside the Castillo each day; inclu-

ding the screens for water screening. Tourist barricades had to be constructed for each area of the site excavated; and large (5' x 3') signs which were made for tourist information, also had to be moved in and out of the Castillo each day. Through the resourcefulness and ingenuity of the NPS staff the logistical problems were solved; but did create time problems that excavation in isolated areas does not normally encounter.

Units were excavated in natural stratigraphic zones, divided into arbitrary 15 cm. levels for vertical control. All soil discolorations and intrusions were mapped, recorded and removed separately. All culturally deposited excavated soil was screened with water through  $\frac{1}{4}$ " hardware cloth. The single exception to this was the material from the Seminole room, where water screening was not possible. Material from each discrete provenience was assigned a field specimen number consecutively throughout the site. 276 field specimen numbers were assigned to those intrusions which were clearly of cultural origin. These were assigned consecutively throughout the entire excavation (the Castillo was considered as a single site throughout the excavation and recording systems).

The recording system included a field journal kept by the project supervisor; a field specimen catalog form; a feature form for each feature; a photo log (all photographs were logged and numbered); an excavation unit form which summarized the provenience and recording data for each excavated unit after its completion; a stratigraphic record form made out for each profile map; and a map catalog.

Plane maps were made of all features and intrusions by level; profile maps (sections) were made of earth walls of completed units; and elevations were mapped for masonry walls included in the excavation.

All measurements were made using the metric system, and all elevations taken with a transit and stadia rod down from a datum plane of known sea level elevation. For this report, all elevations have been converted to meters above mean sea level. Table 1 shows the local datum and datum reference for each area excavated. Excavations inside the fort latrines used a line level extending from a known elevation to take depth measurements.

Horizontal controls were established separately for each area of the fort excavated, due to the limited nature of testing. In all cases, excavation units were tied into and located by existing walls of the Castillo. Locations of individual units is given in the discussions of each area excavated. Artifacts, field records, maps and photos are presently being curated at the Southeast Archeological Center, NPS. Eventual curation of the artifacts will be at the Castillo.



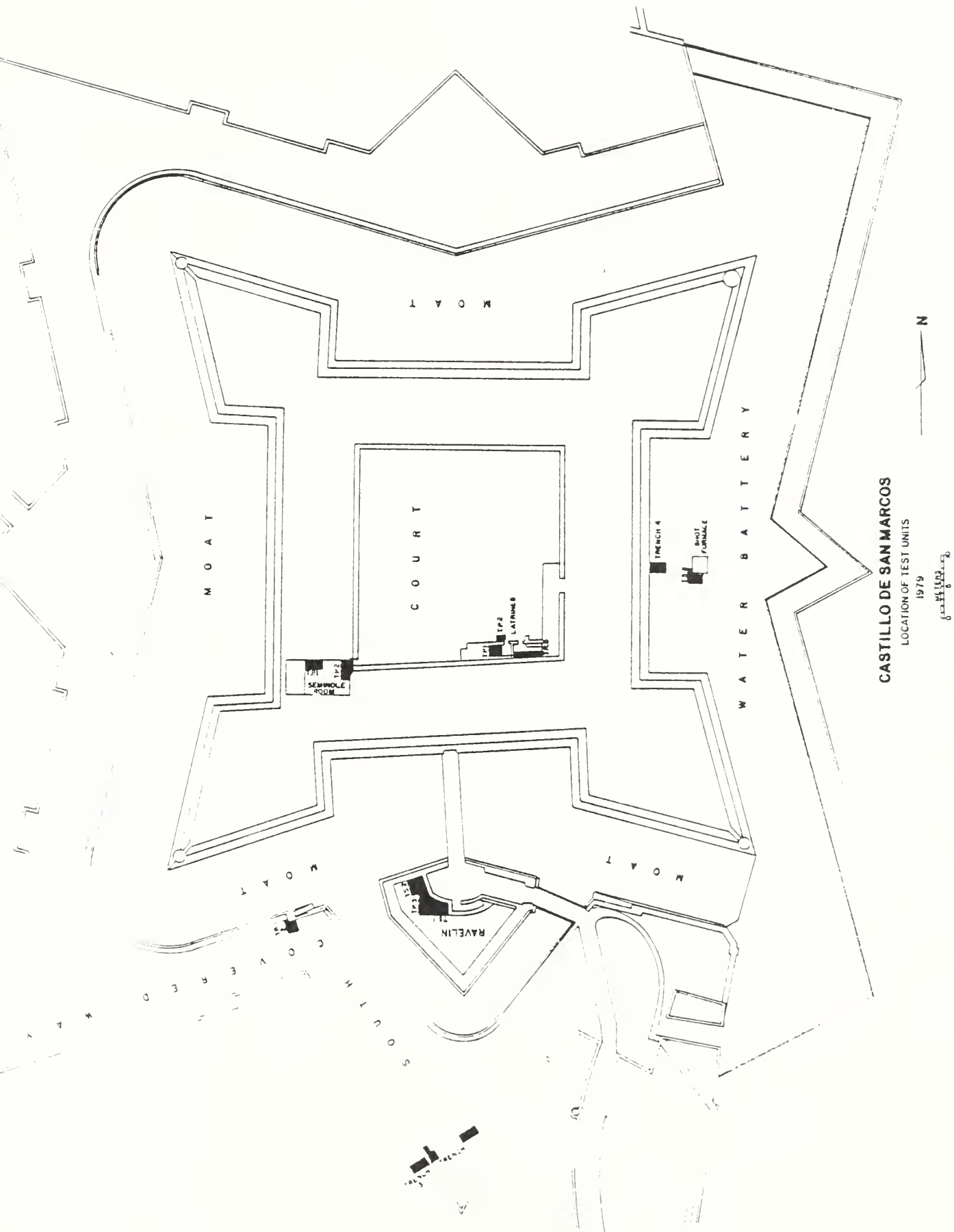


FIGURE 1. Locations of Test Units in the 1979 CASA Project

Table 1. Mean Sea Level Elevations: Excavation Datums CASA 1979

Locus	Datum MSL	Reference	Local Datum
South covered way	5.735	FGS-UGS seawall marker Marion Benchmark 2.134 MMSL (USGS NPS-USDI)	1.67 m. above top of ground at east side of large cedar tree near center of south covered way.
Ravelin	5.55	south covered way datum	2.19 m. above top of ground at Glacis (Tree 3-south covered way) Northeast corner (.23 m. above south covered way local datum)
Water Battery	3.67	south covered way datum	North wall of shot furnace 43 cm. below peak of wall.
Fort interior	4.67	Ravelin datum; Manucy 1941 sill elevations	1.40 m. above pavement under exact center of sally port-court yard entrance arch.

## South Covered Way Excavations

Four excavation units were opened in the south covered way, in order to investigate the following:

1. The condition of the sub-grade coquina walls on the counterscarp wall and the south covered way wall.
2. The condition of the floodlight electrical conduits at the south covered way wall and the counterscarp walls.
3. Issues not directly related to stabilization, but for which the excavations were expected to yield data included:
  - a. Nature of construction of the south covered way wall and counterscarp walls.
  - b. Rate, origins, and extent of colonial fill in the south covered way.
  - c. The location of colonial wells indicated on maps of the area.
  - d. The stratigraphy of the glacis on the south side of the south covered way wall.

Figure 2 shows the location of the trenches in the south covered way. These were designated as Trenches 1-3, which were subdivided into 1.5-meter sections. The trenches were horizontally tied in to a datum point on the south covered way wall, which was at the exact intersection of the walls in the southeast corner of the south covered way. Table 1 shows the location and sea level elevation of the datum point, from which all vertical measurements were made.

Trench 1 was extended for 9 meters into the south covered way, at a  $90^{\circ}$  angle from the north side of the south covered





FIGURE 2. Locations of Test Units in the South Covered Way

way wall. The southeast corner of the unit was located on the south covered way wall, at a distance of 8.69 meters west of the inner southeast corner of the south covered way wall itself. The unit was 1.5 meters wide, and divided into six 1.5 x 1.5 meter units, designated from south to north as A-F. Section A of Trench 1 was additionally extended twice to the west. These extensions were made to better reveal the base of the wall, and also as a safety measure to counteract the extreme depth of the excavations adjacent to the wall itself. These extensions were adjacent to the west side of Trench 1, Section A, extending to the west. Extension A measured .75 x 1.5 meters, and section B, adjacent to the west side of extension A, measured .75 x 1.0 meter (Figure 2). Trench 1, Section A and Extensions A and B were excavated to pre-Castillo subsoil in order to reveal the condition of the covered way wall's north side; to determine the nature and date of construction; to check the floodlight electrical conduit, and to provide a stratigraphic section of the covered way fill. Sections E and F were excavated only partially, as a test for the well location discussed below, and for evidence of south covered way stratigraphy and previous activity. These units were closed at .5 meters below ground surface (3.82 MMSL), for several reasons: These included:

- 1) An objective was to locate the Second Spanish period well indicated on the 1785 Roque map (Appendix 1, map 5 ). According to the map, the well would have been in the approximate position of Trench 1, Section F. No evidence for the well was encountered by the depth of 3.82 MMSL, although there was artifactual evi-

dence that the deposits at that level were of the second Spanish period.

B. Other goals of the excavation, such as covered way stratigraphy and fill evidence had already been achieved in Test Trenches 2 and 3, and 1-A.

C. This area was of no direct relevance to the stabilization program.

Trench 2 was established adjacent to the counterscarp wall in the position shown in Figure 2. The trench was 3 meters by 2 meters with its long axis oriented along the counterscarp wall, in such a manner that the north profile of the unit would include the counterscarp south face. This unit was excavated to a depth of 1.42 m. (2.61 MMSL) at which point the stabilization goals had been met, and the size of the unit precluded, for safety reasons, that excavation be continued to a greater depth.

Trench 3 was located on the south side of the covered way wall, directly in line (but on the opposite side of the wall from) Trench 1. The northeast corner of this unit was on the south side of the covered way wall, at a distance of 8.69 meters west of the inner southeast corner of the covered way wall itself. Its dimensions were 1.5 meters by 3 meters, with the long axis oriented north-south. The purpose of this unit was to reveal the sub-grade condition of the south side of the covered way wall, and secondarily, to document the construction and stratigraphy of the glacis. Its placement was selected to provide a continuous section through the wall. Section A of this trench, located adjacent to the wall, was excavated to a depth of

1.71 m. (1.87 MMSL). Although neither sterile soil nor the base of the wall itself had been revealed at this point, stabilization priorities were met, and it was deemed in the interest of time and other pressing stabilization needs to close the unit at that level.

### Archeological Data

#### Trench 1, Sections E-F

These sections of Trench 1 will be considered as a single unit since they were adjacent, revealed no differences in deposit, and section E was disturbed by modern materials, such as aluminum foil, plastic and 7-Up bottle glass, to the base of excavation.

Four stratigraphic zones were encountered in the excavation unit, and were excavated in four levels. The uppermost zone consisted of modern dark humus and grass sod, extending from 4.32 MMSL to 4.17 MMSL. The lowest two zones in the unit probably dated to the American period of occupation in the first half of the 19th century. The zone above these, consisting of 15 cm. of crushed shell and grey-black soil had a charred appearance, and suggested that a fire-related event took place at some time near the middle of the 19th century (since it is above early 19th century levels and contained a fragment of whiteware). Sections E-F are in the approximate location of the Sergeant's house known to have been present during the 19th century (see Historic Data Section-American Period). The lower three levels of the trench are probably associated with that occupation.

Table 2. South Covered Way Provenience Guide

Datum: 5.73 MMSL (all elevations in meters above sea level)

Trench 1, Section A (South Covered Way wall)

FS#	Provenience	Top	Base	TPQ	Cultural Association
12,14, 17,20	Levels 1-4	4.36	3.75	Plastic, Aluminum	Modern electrical conduit distribution
21	Levels 5-6	3.75	3.28	B/W Delft	1762 fill
49	Level 7	3.28	3.11	Fig Springs Polychrome	original south covered way fill
54	Level 8	3.11	2.93	Iron nails	"
58	Level 9	2.93	2.78	El Morro ware	"
57	Level 10	2.78	2.68	Brown salt glazed stoneware	"
71	Level 11	2.68	2.51	San Marcos	"
26	Area 1, Level 1	3.72	3.59	White salt glazed stoneware	1762 south covered way fill
32	Area 1, Level 2	3.59	3.38	Kaolin Pipestem	"
25	Area 2, Level 1	3.77	3.37	White salt glazed stoneware	"
30	Area 2, Level 2	3.76	3.36	White salt glazed stoneware	"
50	Area 2, Level 3	3.36	3.23	San Marcos	"
51	Area 2, Level 4	3.23	3.00	San Marcos	"

Trench 2, Section A (counterscarp)

Levels 1-3	4.01	3.46	Cement conduit, electrical wire	
Level 4	3.46	3.18	Ichitucknee B/W	Secondary fill deposit: 18th covered way
Level 5	3.18	3.00	Fig Springs Polychrome	"
Level 6	3.00	2.85	St. Johns	"
Level 7	2.85	2.60	San Marcos	"
Level 8	2.60	discontinued	St. Johns	"
Area 1	3.63	3.37	Mexican Red Film	"
Area 2	3.54	3.35	San Marcos	"
Area 3	3.34	3.20	San Marcos	"
Area 6, Level 1	3.01	2.84	San Marcos	"

Table 2, cont'd. South Covered Way Provenience Guide

FS#	Provenience	Top	Base	TPQ	Cultural Association
	Area 6, Level 2	2.84	2.34	San Marcos	secondary fill posit: 18th c. covered way
	Area 7, Level 1	2.93	3.67	San Marcos	"
	Area 7, Level 2	3.67	3.49	San Marcos	"
	Area 7, Level 3	3.49	2.33	San Marcos	

Trench 3, Section A (Glacis) (Elevations at north end of trench)

22	Level 1	5.72	5.31	Aluminum	Modern disturba
23	Level 2	5.31	5.17	Plain faience	18th c. fill (s condary)
35-36	Level 3	5.17	4.97	Ichitucknee B/W	"
39-40	Level 4	4.97	4.84	White salt gla- zed stoneware	"
47	Level 5	4.84	4.61	Olive jar	"
55	Level 6	4.61	4.45	Iron nail	"
59	Level 7	4.45	4.31	San Marcos	"
53	Level 8	4.31	4.16	Aboriginal Plain	"
68	Level 9	4.16	4.02	Aboriginal Plain	"
68	Feature 4 (Fill)	4.72	4.39	San Marcos	"
43	Pit 1 (Fill)	4.71	4.61	Clay daub	"

Other than several shallow soil discolorations which yielded no cultural remains, a single feature (Feature 1) was encountered in this unit. The feature was a pipe trench, intruding from the upper humus zone, and extending to 3.64 MMSL. At that depth it contained a PVC-plastic pipe. Excavation was suspended and visqueen lining placed in these units at 3.77 MMSL prior to backfilling.

#### Trench 1, Sections A, Extensions A and B

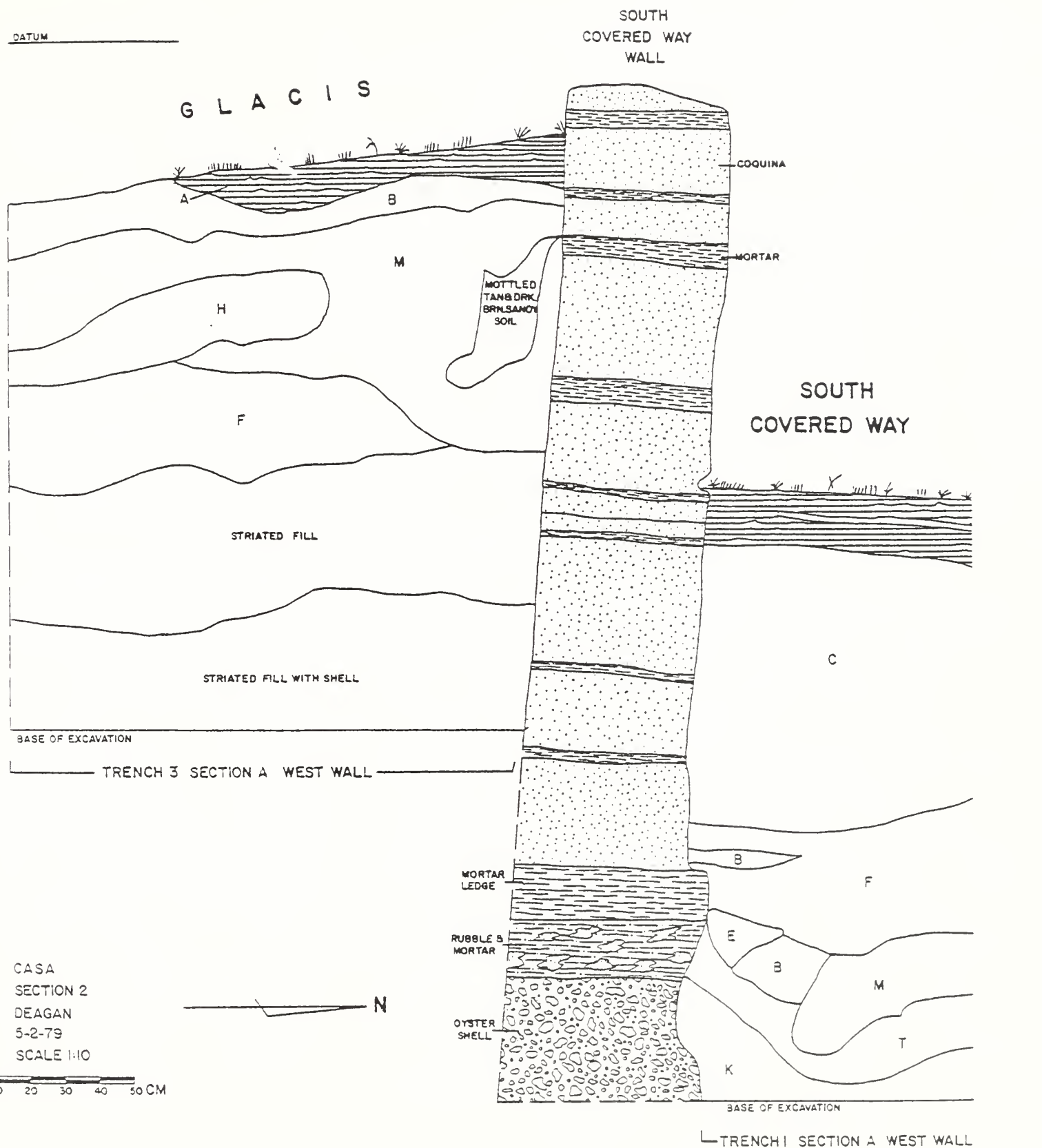
These units will also be discussed as a single unit, since they have spatial and depositional continuity, and considered together, provide evidence for the electrical conduit condition as well as 4 meters of profile along the north face of the covered way wall.

The units were excavated to a depth of 1.90 meters below surface (2.46 MMSL), in 11 levels. Figure 3 shows the soil profile and wall elevations, and Table 3 the distribution of artifacts in the levels and intrusions of the unit. Since it became apparent that virtually all of the excavated material was secondary fill brought into the south covered way as part of the defense construction, only the west half of each level was screened to provide an accurate and comparable dating sample for each level.

Nearly 1.8 meters of fill were added to the south covered way over its history, adjacent to the covered way wall. This was done in 4 major zones; most recently represented by "A", modern humus and sod. Below this zone (extending from 4.36 MMSL to 4.16 MMSL) was a fill layer of .8 meters in thickness



DATUM



CASA  
SECTION 2  
DEAGAN  
5-2-79  
SCALE 1:10

TRENCH 1 SECTION A WEST WALL

## KEY TO SOIL PROFILES

- |  |                                    |
|--|------------------------------------|
| A- modern duff & humus                   | M- mottled yellow, brown sand      |
| B- grey-brown sand w/ shell flecking     | w/ shell flecking                  |
| C- med. brown sand w/ shell flecking     | N- tan sand with crushed shell     |
| D- dark brown sand w/ shell flecking     | O- oyster shell footing            |
| E- light brown sand w/ shell flecking    | P- tabby floor                     |
| F- med. brown sand w/ whole shell        | Q- loose concentrated coquina      |
| G- med. brown sand                       | R- burnt soil, shell charcoal      |
| H- light brown sand                      | S- concrete floor                  |
| I- tan sand                              | T- black midden soil w/ whole she  |
| J- dark grey-brown sand                  | U- dark brown soil w/ whole shell  |
| K- gold sterile sand                     | V- dark brown, gold soil w/ shells |
| L- mottled yellow, gold, brown, tan sand |                                    |

FIGURE 3  
South Covered Way:  
Trenches 1 & 3  
West Profiles,  
Section through SCW  
Wall



Table 3. South Covered Way, Trench 1 Section A: Ceramics

Artifact Description	Level 5 west $\frac{1}{2}$	Area 1 Level 1	Area 1 Level 2	Area 2 Level 1	Area 2 Level 2	Area Level
<u>Hispanic</u>						
Ichucknee Blue on white						
Fig Springs Polychrome		3 .075			1 .050	
Olive Jar, unglazed		1 .025	1 .067			
Olive Jar, glazed						
El Morro						
Mexican Red Film	1 .083					
TOTAL	1 .083	4 .100	1 .067	-	1 .050	-
<u>Other European</u>						
Blue on white Delft	1 .083	4 .100				
Polychrome Delft					1 .050	
Blue on white Faience					2 .100	
UID Tin enamelled coarse earthenware						1
Bisque		1 .025		1 .083		
Slipware				1 .083		
Astbury ware		1 .025				
Jackfield		1 .025				
UID Green glazed coarse earthenware				1 .083		
UID coarse earthenware						1
Brown salt-glazed stoneware						
White salt-glazed stoneware		1 .025		1 .083	1 .050	
TOTAL	1 .083	8 .200	-	4 .332	4 .200	1
<u>aboriginal</u>						
St. Johns Plain		5 .125	7 .467	1 .083	2 .100	3
St. Johns Stamped				2 .167	2 .100	
San Marcos Plain	2 .167	11 .275	2 .133	5 .417	5 .250	5
San Marcos Stamped	1 .083	6 .150			1 .050	2

Table 3, cont'd. South Covered Way, Trench 1 Section A: Ceramics

Artifact Description	Area 2 Level 4	Level 7	Level 8	Level 9	Level 10	Level 11
<u>Hispanic</u>						
Ichitucknee Blue on white		1 .029				
Fig Springs Polychrome						
Olive Jar, unglazed		1 .029			1 .063	
Olive Jar, glazed		1 .029	2 .118			
El Morro				1 .050		
Mexican Red Film			2 .118			
TOTAL	-	3 .088	4 .235	1 .050	1 .063	
<u>Other European</u>						
Blue on White Delft						
Polychrome Delft						
Blue on white Faience						
UID Tin enamelled coarse earthenware						
Bisque						
Slipware						
Astbury ware						
Jackfield						
UID Green glazed coarse earthenware						
UID coarse earthenware				4 .200		
Brown salt-glazed stoneware					1 .063	
White salt-glazed stoneware						
TOTAL	-	-	-	4 .200	1 .063	
<u>Aboriginal</u>						
St. Johns Plain	6 .429	12 .343	7 .412	6 .300	3 .188	6
St. Johns Stamped		17 .486	4 .235	2 .100	1 .063	1
San Marcos Plain	3 .214	2 .057		3 .150	2 .125	
San Marcos Stamped	2 .143	1 .027	2 .118	3 .150	8 .500	1

23  
Table 3, cont'd.

Artifact Description	Level 5 west $\frac{1}{2}$	Area 1 Level 1	Area 1 Level 2	Area 2 Level 1	Area 2 Level 2	Area Level
UID sherd-tempered						
UID Incised						
discards	7 .583	6 .150	5 .333		5 .250	
TOTAL	10 .833	28 .700	14 .933	8 .667	15 .750	10
TOTAL CERAMICS	12 .999	40 1.000	15 1.000	12 .999	20 1.000	14

Table 3, cont'd.

Artifact Description	Area 2		Level 7		Level 8		Level 9		Level 10		Level 11	
	Level 4											
VID sherd-tempered	1	.072										
VID Incised							1	.050				
discards	2	.143										
TOTAL	14	1.000	32	.914	13	.765	15	.750	14	.875	8	1
TOTAL CERAMICS	14	.999	35	1.002	17	1.001	20	1.000	16	1.002	8	1

Table 4. South Covered Way, Trench 1 Section A: Non-Ceramic Material Culture (+-indicates presence)

Artifact Description	Level 5 west $\frac{1}{2}$	Area 1 Level 1	Area 1 Level 2	Area 2 Level 1	Area 2 Level 2	Area Level
<u>Glass</u>						
Green	1			6		
Clear				2		
<u>Iron</u>						
whole nails		6		6	6	
nail fragments		4	2	2		
tack	1					
window latch		1				
slag						
flakes/lumps	+	+	+	+	+	
<u>Brass</u>						
grommet				1		
button					1	
<u>Kaolin Pipes</u>						
stem			1			
Bowl		1				
<u>Rock</u>						
Chert	1					
<u>Construction Material</u>						
coquina		+	+		+	+
Tabby					+	
mortar		+	+	+	+	+
plaster					+	
brick	+			+	+	+
Charcoal		+	+		+	+

Table 4. South Covered Way, Trench 1 Section A: Non-Ceramic Material Culture (+-indicates presence).

Artifact Description	Area 2 Level 4	Level 7	Level 8	Level 9	Level 10	Level 11
<u>Glass</u>						
Green						
Clear						1
<u>Iron</u>						
whole nails			1	1		
nail fragments			1			
tack						
window latch						
slag				+		
flakes/lumps				+	+	+
<u>Brass</u>						
grommet						
button						
<u>Clay Pipes</u>						
Stem						
Bowl						
<u>Rock</u>						
Chert						
<u>Construction Material</u>						
Coquina		+	+	+	+	+
Tabby		+	+	+		
mortar		+	+	+	+	+
plaster						
brick		+	+	+	+	+
Charcoal		+	+	+	+	+
Worked bone			1			

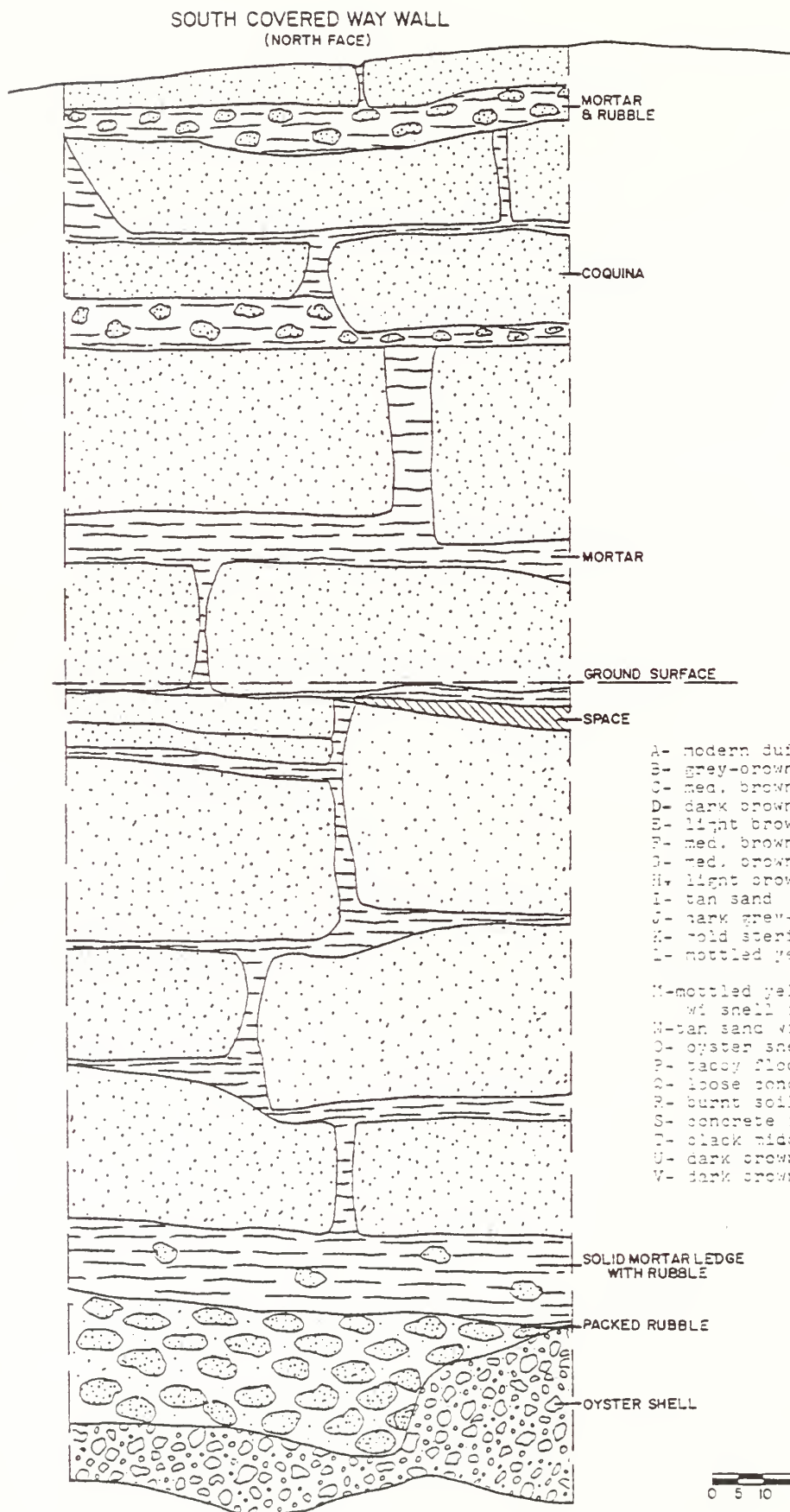
(4.16 MMSL to 3.36 MMSL). This zone, designated "C", was comprised of medium brown sandy soil, with broken shell inclusions (see Figure 3). The excavation units corresponding to Zone C in this section include all of levels 3, 4, 5 and nearly all of level 6 (Level 6 not only was at the interface between zones C and D, but was almost completely intruded upon by Areas 1 and 2 in this unit). Levels 2, 3, and 4 contained 20th century material disturbance (rubber wire insulation; 20-gauge shotgun shell) (see Table 3) but yielded predominantly first Spanish period remains. Level 5 contained only first Spanish period artifacts (although no dateable European wares), and it overlaid Areas 1 and 2, which contained material dating to the mid-18th century (White salt glazed stoneware, Jackfield ware) as the TPQ. Level 6 was, as mentioned above, at the interface of two zones, and the very small amount of level 6 remaining around Areas 1 and 2 contained no dateable cultural materials. Zone C, therefore, represents the major filling portion activity in the south covered way known to have taken place in 1762 (Arana and Manucy 1977:57-58). Other than the few modern items disturbing the upper levels (and it seems quite likely that these are the results of the placement of the floodlights and their conduits in the unit) all of the material in Zone C dates to the 18th century first Spanish period.

At 3.36 MMSL a change in soil color, content and texture occurred, and is designated in Figure 3 as Zone F. This



actually appeared near the base of level 6, but was obscured by Areas 1 and 2 until the unit walls were cut back for profiling. Therefore, part of this zone was obscured by, and intruded upon by Areas 1 and 2, and was removed as such. Zone F was comprised of medium brown sandy soil, containing whole clam and oyster shells, and extended for a depth of 36 cm. (3.36 MMSL to 3.00 MMSL). Level 7 consisted entirely of Zone F, and this level contained only 17th century (and earlier) materials (with a TPQ of 1600, provided by a sherd of Ichtucknee Blue on White majolica). Historical data, however, allows us to extend the TPQ for this provenience to 1675, as the earliest period of construction for the Castillo.

The base of Zone F appeared in level 8 (3.11 MMSL to 2.98 MMSL) at 3.00 MMSL. At this point areas of yellow and brown mottled soil with crushed shells were apparent, which upon excavation, were revealed as a zone of soil disturbed by the initial construction of the south covered way wall. This appears in Figure 3 as Areas "E", "B", and "M". Its nature became apparent with the appearance of the oyster shell footing which occurred below these areas, near the base of level 8, at 2.98 MMSL. This footing was of packed whole and crushed oyster shells, as well as packed building rubble, and apparently was packed into a footing trench approximately 35 cm. deep. No evidence for a builders trench was found. Level 9 was adjacent to the footing itself, and was excavated from 2.93 MMSL to 2.78 MMSL. The fill of level 9 was the



#### KEY TO SOIL PROFILE

- A- modern duff & humus
- B- grey-brown sand w/ shell flecking
- C- med. brown sand w/ shell flecking
- D- dark brown sand w/ shell flecking
- E- light brown sand w/ shell flecking
- F- med. brown sand w/ whole shell
- G- red. brown sand
- H- light brown sand
- I- tan sand
- J- dark grey-brown sand
- K- cold sterile sand
- L- mottled yellow, cold, brown, tan sand
- M- mottled yellow brown sand w/ shell flecking
- N- tan sand with crushed shell
- O- oyster shell footing
- P- tacey floor
- Q- loose concentrated coquina
- R- burnt soil, shell charcoal
- S- concrete floor
- T- black midden soil w/ whole shell
- U- dark brown soil w/ whole shell
- V- dark brown, cold soil w/ shells

CASA  
ELEVATION 2  
5-1-79  
DEAGAN  
SCALE 1:10

0 5 10 20 30 40 50 CM

FIGURE 4

South Covered Way Wall - North Elevation



FIGURE 5

South covered way wall, sub-grade elevation

yellow and brown mottled soils of Zone D, although near the base of the level, at 2.77 MMSL, an area of dark brown, humic rich soil with many whole shells was encountered. This dark humic layer is designated "T" on Figure 3, and is a remnant of the aboriginal, pre-fort midden now known to extend throughout the entire site (see discussion below in Glacis section).

Level 10 and level 11 (2.78 MMSL to 2.63 MMSL and 2.63 MMSL to 2.46 MMSL respectively) were comprised of gold-brown sandy soil, without apparent inclusions. This fill was not, however, sterile, since both levels contained aboriginal material, and level 10 contained a fragment of brown salt glazed stoneware, dating it to the first Spanish period (Brown salt glazed stonewares can occur in Bellarmine forms from the early 16th century). These levels extended below the base of the oyster shell footing (see below), and excavation was discontinued at the base of level 11 (2.46 MMSL).

In summary, the soil profile from Trench 1, Section A and Extensions A and B reveal a sequence of fill and construction in the south covered way from the 17th century to the present day. Three major zones of filling were apparent: Areas E, B, and M of mottled yellow and brown soil, which were associated with the initial construction of the south covered way wall, and which contained predominantly aboriginal and 17th century artifacts Zone F, which was of brown sandy soil with whole shell inclusions and which was deposited shortly after the completion of the covered way wall footing and at least the lower courses of the wall. This Zone F contained aboriginal and 17th century Spanish



materials. Above Zone F was Zone C, a 1.8 meter thick deposit of medium brown sandy soil with crushed shells. The lower levels of this deposit (below about 3.75 MMSL) contained materials of the 18th century, and the upper levels were disturbed by the placement of the floodlight and its conduits. It would appear, however, that the zone was deposited at some time after the mid-18th century, most likely with the filling activity of 1762. The uppermost zone, Zone A, consists of modern humic deposit and sod placement.

Ground level at the time of initial wall construction was probably at about 3.06 MMSL, which coincides with the top of the wall footing and its associated Area 5. This was then apparently filled at a later date to an elevation of approximately 3.75 MMSL, which coincides with the top of Zone F and the base of Zone C. The considerable discontinuity between the zones as well as the differences in the nature of their contents indicates that this level at about 3.75 MMSL was the ground surface adjacent to the wall at a point in time at or shortly after the mid 18th century (probably 1762). The artifactual contents of Zone F and the areas below it do not indicate a long enough range to suggest whether Zone F was a gradual accumulation between initial wall construction and the mid 18th century, or whether Zone F was deposited immediately following construction of the south covered way wall. Architectural features suggest that the zone was a gradual accumulation, since, as Figure 3 clearly shows, there is a mortar ledge 3.24 MMSL, near the base of Zone F. This ledge, which

rests above the shell footing, would seem to be a logical index of prior ground surface, since it is above the footing, directly above the areas of disturbance associated with the footing, and is a squared and regular ledge extending 5 cm. northward from the face of the wall. Zone F was therefore probably deposited gradually up to 3.75 MMSL during the first half of the 18th century. Zone C was thus deposited in the same manner during the second half of that century. This was most probably the filling done in 1762 (Arana and Manucy 1977: 57), with subsequent accumulation through use.

#### The South Covered Way Wall

Figures 3 and 4 show the north elevation of the south covered way wall, and the wall section respectively. Today the wall is comprised of 2.90 meters of coursed coquina blocks over oyster footing, mortared together with thick (5 to 11 cm.) lime mortar. At about .66 meters above the present ground surface (5.02 MMSL) the coquina blocks are smaller and less regular, and the mortar bonds contain considerable shell and coquina rubble. It could be suggested that this point on the wall represents the top of the wall when the ground surface was at the 2.40 level discussed above.

The 2.30 meters of coquina block rest on a ledge of mortar mixed with rubble, which is approximately 18 cm. thick, and extends outward for 5 cm. to the north from the wall. At between 3.11 MMSL and 3.16 MMSL the mortar ledge rests on the footing itself. Figure 5 shows a small section of the wall face elevation, and that portion reveals the dual nature of

the footing. It is variably comprised of either packed oyster shell, or packed building rubble, brick and shell along its length. The footing itself is 35 to 45 cm. deep, and the base elevation is 2.76 MMSL.

The wall itself leans strongly to the north, at a slope of about 5° north. The north face is not plastered, although the south face, revealed in the excavation of Trench 3 on the glacis, is plastered to below 3.87 MMSL. (point of excavation suspension) which coincides with level 4 in Trench 1 Section A.

#### The Glacis Excavation

Trench 3 (Figure 2) was located on the south side of the south covered way wall, opposite Trench 1. It was excavated in order to see the condition of the wall's south side at below grade, and also to learn about the construction of the glacis at that point.

Figure 3 shows the profile section of the west earth walls of Trench 3 and Trench 1, as well as a section of the south covered way wall at that point. Figure 6 shows the south face of the south covered way wall.

Excavation was carried to a depth of 1.70 meters below ground surface adjacent to the wall. At this point the wall was no longer plastered, suggesting that this was the grade prior to the final construction of the wall. Support for this interpretation is provided by the fact that in 1762, six feet of wall was added on the south covered way (Arana and Manucy 1977:57); and the distance from the top of the extant wall to





FIGURE 6

South Covered Way Wall - South Elevation  
(Glacis side)

the base of the plaster is 1.84 meters or 6.01 feet. Therefore the 1761 glacis grade was at 5.35 MMSL (1.70 meters below surface).

The entire profile shown in Figure 3 is of various fill deposits made to build up the glacis. This was excavated in 9 levels. The latest dating item in the 9 levels (see Table 3B) was a sherd of white salt glazed stoneware found in level 3, firmly placing the deposit in its expected historical context.

The 1931 excavation of the glacis done by Winter extends our understanding of glacis stratigraphy. He found the south covered way wall to have been 10.5 feet (3.2 meters) in height, near the juncture of the Cubo line and the covered way. Two fill deposits were noted; a primary fill adjacent to, and sloping downward away from, the wall, and a layer of secondary fill overlapping the primary fill at about halfway between the covered way wall and the present day parking lot area.

The primary fill (which appears to have been virtually the same deposit as that excavated in this project), extended adjacent to the wall to a depth of 8.83 feet (2.70 meters). At that level, a layer of dark humus overlying "marsh muck" was encountered; and water was encountered at 14 feet (4.28 meters) below surface. The "marsh muck" encountered by Winter is within 2 cm. of layer "T" in the Trench 1 profile (Figure 3). This was a layer of black midden soil with whole shells. Subsequent excavation in other fort areas; in both 1956 (Harrington, Manucy and Griffin) and 1979, have revealed that this black

layer of soil extends under the entire area of the site (except where the moat excavations removed it). Inside the fort, the layer was encountered at 2.70 MMSL. Winters found it at roughly 2.73 MMSL, and it was at about 2.80 MMSL in the covered way itself.

### The Counterscarp

Excavations in this unit revealed that the counterscarp wall at the location of the unit (see above) was in stable condition. 8 levels were excavated in this area, to a depth of 2.63 MMSL (1.4 meters below ground surface). Figures 7 and 8 show the face of the counterscarp wall elevation; and Table 5 shows the distribution of artifacts in the fill.

The entire area excavated was apparently secondary fill deposited during the first Spanish period. The unit was disturbed by the wiring system for the floodlight on the moat side of the counterscarp, both in the wall itself (see Figure 8), and along the south side of the excavation unit, where a cement box conduit for other electrical wires had disturbed the upper three levels.

The upper 1.03 meters of the counterscarp wall was of a double thickness, two courses wide (1 meter). Below this point, a recess was present and the wall continued downward in a single course, 45 to 50 cm. wide (north-south). The top of the wall itself assumed a "Z" shaped configuration in the excavation unit, due to the presence of the moat stairs. At 2.00 meters below the top of the wall a large discoloration was present, encircling the portion of the wall extending into the

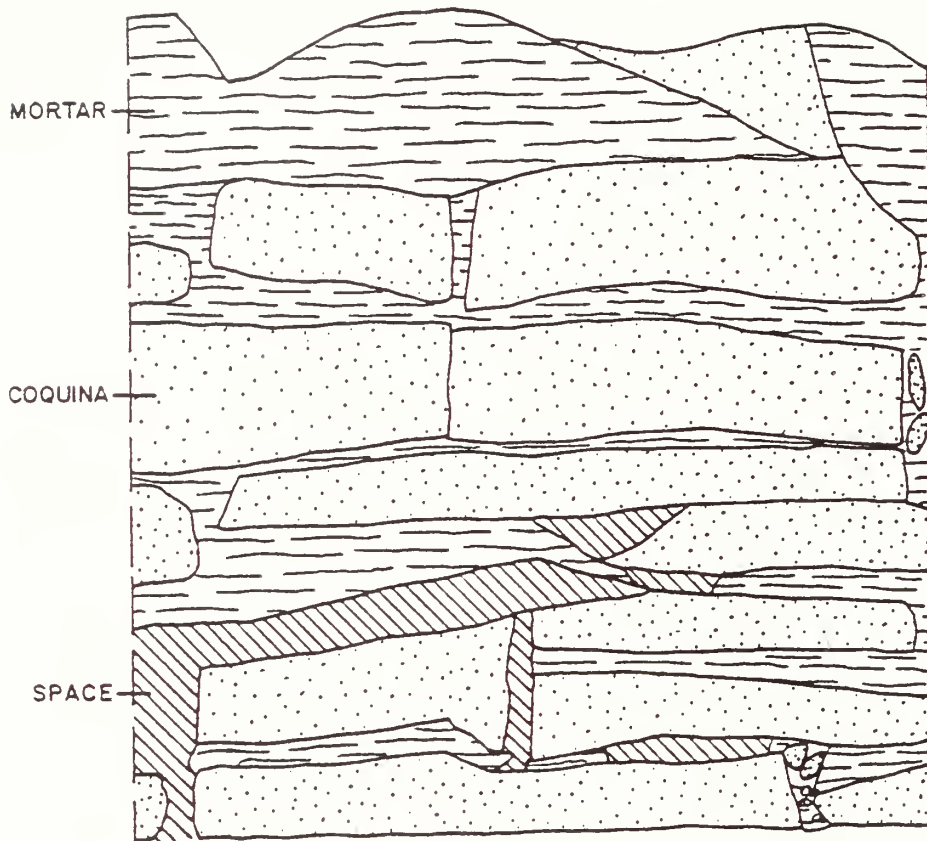


excavation unit (Area 6). This appears to have been a construction pit used for repairing, or possibly constructing, the second (inner) course of this portion of the wall. If it was a construction pit, it suggests that the ground surface at the time of that construction would have been at about 3.01 MMSL. This is 28 cm. below that level in the south covered way trench which was suggested as the pre-1762 covered way grade. This difference is minimized, however, when the fact that present ground surface between the two pits varies by 35 cm. (counterscarp being lower); thus a real difference of only 7 cm. is present.

The tentative interpretation at this time is that the original counterscarp wall top was at an elevation of circa 3.00 MMSL, or 1 meter below today's ground surface at the counterscarp pit. During the 1762 work in the south covered way, the wall was heightened by 1 meter; and made 1 meter thick instead of the 50 cm. thickness apparent below that point. Then levels 5 to 1 were added as fill, bringing the area up to its present grade.

It is also of interest that the materials in level 6 and below are highly typical of an early historic Indian village. Proportions of artifacts from the fill are very similar to those from nearby aboriginal sites (Vernon 1979, Williams n.d. ) and suggests that a nearby aboriginal site may have been relocated to the Castillo south covered way during the 17th century, as part of the filling process.

# COUNTERSCARP WALL



TRENCH 2 SECTION A NORTH FACE

CASA  
ELEVATION I  
4-30-79  
DEAGAN  
SCALE 1:10

## KEY TO SOIL PROFILES

0 5 10 20 30 40 50 CM

- |  |                                     |
|--|-------------------------------------|
| A- modern duff & humus                   | M- mottled yellow, brown sand       |
| B- grey-brown sand w/ shell flecking     | W- tan sand with crushed shell      |
| C- med. brown sand w/ shell flecking     | O- oyster shell footing             |
| D- dark brown sand w/ shell flecking     | P- tacey floor                      |
| E- light brown sand w/ shell flecking    | Q- loose concentrated coquina       |
| F- med. brown sand w/ whole shell        | R- burnt soil, shell charcoal       |
| G- med. brown sand                       | S- concrete floor                   |
| H- light brown sand                      | T- black midden soil w/ whole shell |
| I- tan sand                              | U- dark brown soil w/ whole shell   |
| J- dark grey-brown sand                  | V- dark brown, gold soil w/ shells  |
| K- gold sterile sand                     |                                     |
| L- mottled yellow, gold, brown, tan sand |                                     |

FIGURE 7

South Covered Way, Trench 2, Section A  
Counterscarp wall, North Face



FIGURE 8  
Counterscarp Wall - South Face

Table 5. Counterscarp, South Covered Way, Trench 2 Section A:  
Ceramics

Artifact Description	Level 4		Level 5		Level 6		Level 7		Level 8		Area
<u>Hispanic</u>											
Ichtucknee Blue on Blue	1	.083									
Fig Springs Polychrome			1	.034							
UID Polychrome Majolica											1
Olive Jar, unglazed	1	.083	4	.138							
Mexican Red Film			1	.034							1
TOTAL	2	.167	6	.207	-	-	-	-	-	-	2
<u>Other European</u>											
UID coarse earthenware											1
TOTAL	-		-		-	-	-	-	-	-	1
<u>Aboriginal</u>											
St. Johns Plain	5	.417	7	.241	1	.500			1	1.000	
St. Johns Stamped	2	.167	3	.103							1
San Marcos Plain			4	.138			1	1.000			23
San Marcos Stamped	3	.250	7	.241							9
UID Fiber-tempered			2	.069							
Weeden Island Plain					1	.500					
discards											
TOTAL	10	.833	23	.793	2	1.000	1	1.000	1	1.000	33
TOTAL CERAMICS	12	1.000	29	.998	2	1.000	1	1.000	1	1.000	36



Table 5, cont'd. Counterscarp, South Covered Way, Trench 2  
Section A: Ceramics

Artifact Description	Area 2		Area 3		Area 6 Level 1		Area 6 Level 2		Area 7 Level 1		Area 7 Level 2	
<u>Hispanic</u>												
Ichtucknee Blue on blue												
Fig Springs Polychrome												
UID Polychrome Majolica												
Olive Jar, unglazed												
Mexican Red Film												
TOTAL	-		-		-		-		-		-	
<u>Other European</u>												
UID coarse earthenware												
TOTAL	-		-		-		-		-		-	
<u>aboriginal</u>												
St. Johns Plain	5	.333	1	.083	4	.103	18	.273	1	.250	3	
St. Johns Stamped	1	.067			9	.231	7	.106			5	
San Marcos Plain	4	.267	3	.250	6	.154	11	.167				
San Marcos Stamped	3	.200	3	.250	9	.231	17	.258	1	.250		
UID Fiber-tempered												
Weeden Island Plain												
discards	2	.133	5	.417	11	.282	13	.197	2	.500	2	
TOTAL	15	1.000	12	1.000	39	1.001	66	1.001	4	1.000	10	
TOTAL CERAMICS	15	1.000	12	1.000	39	1.001	66	1.001	4	1.000	10	

Table 5, cont'd. Counterscarp, South Covered Way, Trench 2  
Section A: Ceramics

Artifact Description	Area 7 Level 3					
<u>Hispanic</u>						
Ichtucknee Blue on Blue						
Fig Springs Polychrome						
UID Polychrome Majolica						
Olive Jar, unglazed						
Mexican Red Film						
TOTAL	-					
<u>Other European</u>						
UID coarse earthenware						
TOTAL	-					
<u>Aboriginal</u>						
St. Johns Plain						
St. Johns Stamped						
San Marcos Plain						
San Marcos Stamped						
UID Fiber-tempered						
Weeden Island Plain						
discards						
UID Aboriginal	2	1.000				
TOTAL	2	1.000				
TOTAL CERAMICS	2	1.000				

Table 5. Counterscarp, South Covered Way, Trench 2  
Section A: Non-Ceramic Material Culture  
(+-indicates presence)

	Level 4	Level 5	Level 6	Level 7	Level 8	Area
Artifact Description						
<u>glass</u>						
Green		1				
Clear		1				
<u>iron</u>						
whole nail						
nail fragment						
slag	+					
flakes/lumps	+	+				
upper fragment						
worked bone						
charcoal	+				+	
<u>rock</u>						
quartz	1					
quartzite	1					
sandstone						
chert						
slate						
<u>Construction Material</u>						
coquina		+	+			
tabby			+			
mortar	+	+	+			
plaster	+					
daub		+			+	
brick	+	+				
flat tile						

50

Table 5, cont'd. Counterscarp, South Covered Way, Trench 2  
 Section A: Non-Ceramic Material Culture  
 (+-indicates presence)

Artifact Description	Area 2	Area 3	Area 6 Level 1	Area 6 Level 2	Area 7 Level 1	Area 8 Level 1
<u>Glass</u>						
Green						
Clear	1					
<u>Iron</u>						
whole nail	1		1	3		
nail fragment			1			
slag	+			+		
flakes/lumps	+	+	+	+		
Copper fragment						
Worked bone			1			
Charcoal	+		+	+	+	
<u>Rock</u>						
quartz						
quartzite						
sandstone				5		
chert			1			
slate				2		
<u>Construction Material</u>						
coquina		+	+	+	+	
tabby			+	+		
mortar			+	+		
plaster						
daub	+	+		+		
brick		+	+	+		
flat tile		1				

Table 5, cont'd. Counterscarp, South-Covered Way, Trench 2  
 Section A: Non-Ceramic Material Culture  
 (+-indicates presence)

Artifact Description	Area 7 Level 3	PPM 1				
<u>Glass</u>						
Green						
Clear						
<u>Iron</u>						
whole nail						
nail fragment						
slag						
flakes/lumps		+				
Copper fragment						
Worked bone						
Charcoal		+				
<u>Rock</u>						
quartz						
quartzite						
sandstone						
chert						
slate						
<u>Construction Material</u>						
coquina		+				
tabby						
mortar	+	+				
plaster	+					
daub						
brick		+				
flat tile						

Table 6. Glacis, Trench 3 Section A: Ceramics

Artifact Description	Level 2	Level 3 north $\frac{1}{2}$	Level 4 north $\frac{1}{2}$	Level 5 north $\frac{1}{2}$	Level 6 north $\frac{1}{4}$	Level 7 north
<u>Hispanic</u>						
Ichtucknee Blue on Blue	1 .050					
Ichtucknee Blue on White		1 .043				
UID Plain Majolica		1 .043				
UID Blue on white Majolica						
Olive Jar, plain		2 .087	3 .081			
Olive Jar, glazed			1 .027	1 .048		
El Morro	1 .050					
Mexican Red Film	1 .050					
Rey ware			1 .027			
TOTAL	3 .150	4 .174	5 .135	1 .048	-	-
<u>Other European</u>						
Blue on white Delft			1 .027			
Plain Faience	2 .100					
UID coarse earthenware			1 .027	2 .095		1
White salt-glazed stoneware			1 .027			
TOTAL	2 .100	-	3 .081	2 .095	-	1
<u>Aboriginal</u>						
St. Johns Plain	1 .050	4 .174	8 .216	7 .333	4 .500	
St. Johns Stamped	1 .050		2 .054	1 .048		2
San Marcos Plain	4 .200	7 .304		2 .095		1
San Marcos Stamped	4 .200	4 .174		4 .190	2 .250	
UID sand-tempered			3 .081			
UID grit-tempered			2 .054			
UID sherd-tempered						
discards	5 .250	4 .174	14 .378	4 .190	2 .250	2
TOTAL	15 .750	19 .826	29 .784	18 .857	8 1.000	5
TOTAL CERAMICS	20 1.000	23 .999	37 1.000	21 .999	8 1.000	6 1

53  
Table 6, cont'd. Glacis, Trench 3 Section A: Ceramics

fact Description	Level 8 north $\frac{1}{4}$	Level 9 north $\frac{1}{4}$	Feature 4	Pit 1		
<u>Spanish</u>						
Ichtucknee Blue on blue						
Ichtucknee Blue on White						
UID Plain Majolica						
UID Blue on White Majolica						
Olive Jar, plain			1 .050			
Olive Jar, glazed						
El Morro						
Mexican Red Film						
Rey ware						
TOTAL	-	-	1 .050	-		
<u>Other European</u>						
Blue on White Delft			2 .100			
Plain Faience						
UID coarse earthenware	2 .200	1 .100				
White salt-glazed stoneware			2 .100			
TOTAL	2 .200	1 .100	4 .200			
<u>Original</u>						
St. Johns Plain	4 .400	4 .400	6 .300			
St. Johns Stamped	2 .200			1 .500		
San Marcos Plain			6 .300			
San Marcos Stamped	1 .100		2 .100			
UID sand-tempered						
UID grit-tempered						
UID sherd-tempered		3 .300				
discards	1 .100	2 .200	5 .250	1 .500		
TOTAL	8 .800	9 .900	19 .950	2 1.000		
TOTAL CERAMICS	10 1.000	10 1.000	20 1.000	2 1.000		



Table 7. Glacis, Trench 3, Section A: Non-Ceramic Material Culture (+-indicates presence)

Artifact Description	Level 2	Level 3 north $\frac{1}{2}$	Level 4 north $\frac{1}{2}$	Level 5 north $\frac{1}{2}$	Level 6 north $\frac{1}{4}$	Level 7 north $\frac{1}{4}$
<u>Glass</u>						
green		1	1	2		
clear		2	1			
<u>Iron</u>						
whole nails	2	3	5	9		
nail fragment	11	9	2		1	
slag			+	+		+
flakes/lumps	+	+	+	+	+	+
iron tack	4					
<u>Pipes</u>						
Kaolin Pipe stem			1			
Bowl						
<u>Rock</u>						
chert						
worked bone						1
coal				+		
charcoal			+	+	+	+
<u>Construction Material</u>						
coquina		+	+	+		+
tabby				+		+
mortar			+	+	+	
plaster		+				
brick	+	+		+		
daub			+			
red tile						
barrel tile	1					
slate						+

Table 7, cont'd. Glacis, Trench 3, Section A: Non-Ceramic  
Material Culture (+-indicates presence)

Artifact Description	Level 8 north $\frac{1}{4}$	Level 9 north $\frac{1}{4}$	Feature 4	Pit 1		
<u>Glass</u>						
green			3			
clear						
<u>Iron</u>						
whole nails						
nail fragment			6			
slag			+	+		
flakes/lumps	+	+	+			
tack						
<u>Pipes</u>						
Kaolin stem						
Bowl						
<u>Rock</u>						
chert			1			
Worked bone.						
Coal						
Charcoal	+	+	+			
<u>Construction Material</u>						
coquina	+	+	+			
tabby	+	+				
mortar	+		+			
plaster						
brick			+			
daub						
red tile			1			
barrel tile						
slate						

### South Covered Way Summary

Excavations in this area revealed masonry conditions and floodlight conduit conditions for the south covered way and counterscarp walls. In addition, information about filling activities in the area was gathered.

The earliest archeologically documented activity in the area was an aboriginal occupation of widespread extent. This is a black soil and whole shell midden, approximately .45 meters thick and at an average elevation of 2.80 MMSL. The contents suggest that this was a late St. Johns IIa or b occupation. There is no indication, however, that the aboriginal village represented here was occupied during historic times. The earliest documented historic activity is that of the initial south covered way and counterscarp walls; and the fill between them. This filling raised the grade to approximately 3.35 MMSL, some 55 cm. The deposit designated "F" in Trench 1, Section A, represents this activity, and contains only aboriginal and 17th century material.

The 3.35 MMSL grade was established either during the initial 1672-95 construction period or during the 1738-56 renovations. This was followed by 1 meter of fill in 1762, heightening of the counterscarp wall by 1 meter and the covered way wall by 1.8 meters. At this time the glacis was filled to approximately its present elevation.

The final archeologically documented activity in the area (other than placement of the floodlights) was the presence and subsequent burning of a wooden structure during

the second half of the 19th century, in the east end of the covered way. This was most likely the house of Sergeant Brown, known to have been in that vicinity. Deposits in Trench 1, Sections E and F reflect the presence of this structure.

### Ravelin Excavations

Three test units, shown in Figure 9, were excavated in the western half of the ravelin. Excavations were done here in order to:

1. Check the sub-grade ravelin walls for deterioration conditions.
2. Investigate the pre-1763 powder magazine known to have been in the northwest corner of the ravelin, and which was located on the 1763 Castello map.
3. Locate other evidence of sub-grade features prior to ravelin surface stabilization.
4. Investigate the filled-in area opposite (to the west of) the present steps into the ravelin, where early maps (see below) indicated that a mirror-image set of steps was originally present.

Consequently, TS (Test Square) 1 was located opposite and to the west of the extant stairs; TS 2 was located in the northeast corner of the west section of the ravelin, and Test Pit 2 was placed between the test squares, in the vicinity of the earlier powder magazine's south wall location.

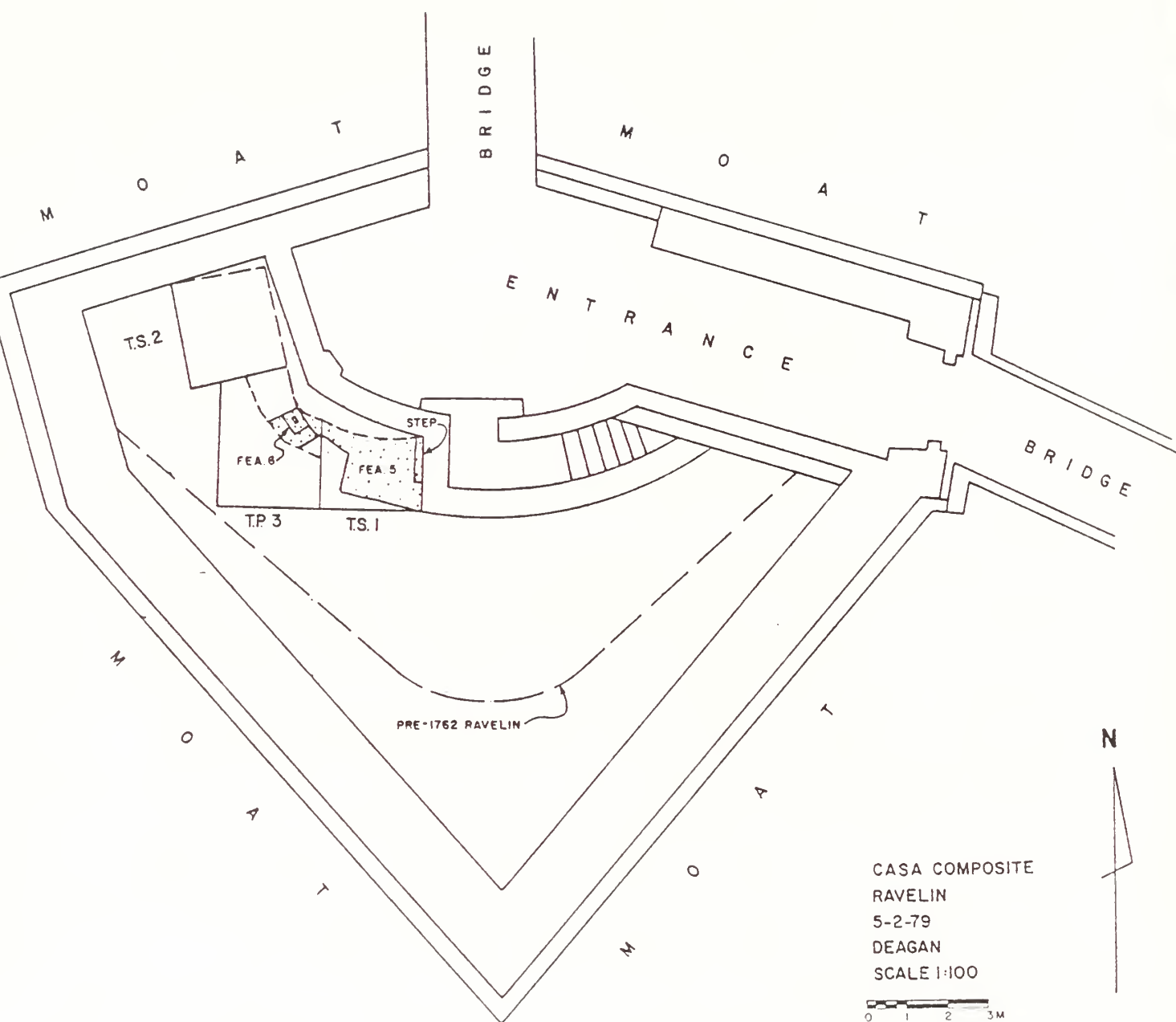


FIGURE 9  
Locations of Test Units in the  
Havelin

The ravelin is a high, rectangular structure located across the moat and directly in front of the drawbridge and sally port (Figure 1). It functioned to protect the sally port during attack, and as a second and final line of defense for the fort itself (the south covered way being the front line). Construction of the ravelin was first completed in 1682 (Arana and Manucy 1977:30), and at that time had a different configuration than that of today; with a rounded rather than pointed south wall. This is shown in Figure 9, located some 6.5 meters south from the present entrance; and 7.75 meters north from the present point of the ravelin south wall. Unfortunately project timetable and contract restrictions precluded location and excavation of that wall.

In 1762, construction was begun to expand the ravelin, to add a powder magazine and to raise the parapet walls by six more feet (Arana and Manucy 1977:53). The first two objectives were accomplished, giving the ravelin its present configuration, but the walls were never raised to the desired height. This was because the fort was ceded to the British in 1763, before the work was completed.

The powder magazine was located in the vicinity of the excavations. This small room used the northwest and east walls of the ravelin's northwest section as its walls, with a wall to the south dividing it from the rest of the ravelin, and a doorway leading to the drawbridge area through the room's east wall. The exterior and interior sections of these rooms in 1763 are reproduced in Figure 10, taken from the map of D. Pablo

RAVELIN 1762 MAGAZINE  
(AFTER CASTELLO 1763)

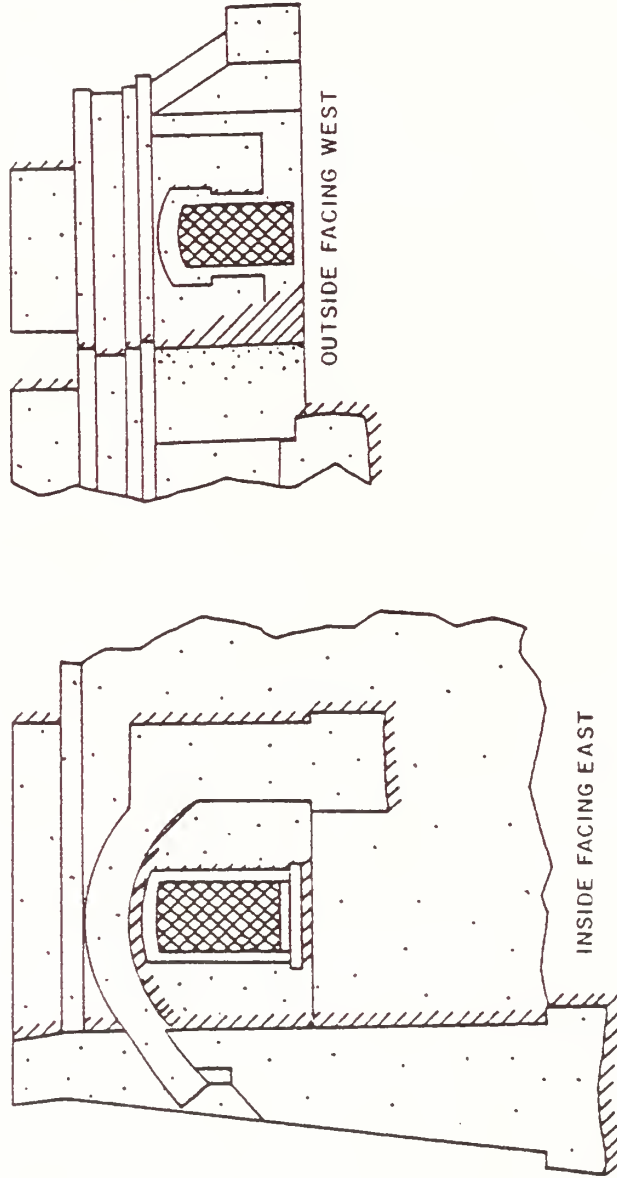


FIGURE 10

Powder Magazine Detail: Castello Map of 1763



Castello y Don Pedro de Brozas y Garay (1763). These show the room with an arched vaulted roof.

The same cartographers show in 1763 the previous ravelin south wall, and the 1763 configuration of the entry stairs, which were double (Appendix 1, Map 4).

Table 8 shows the proveniences which were excavated in the ravelin, by unit.

Test Square 1 was the shallowest excavation, due to the fact that Feature 5, the base of the original ravelin wall configuration, was encountered at 3.97 MMSL., or about 6 cm. below ground surface. This is shown in Figures 9 and 11, and contains a depression at its east end, which bottoms into a stone step with a concave worn surface. This undoubtedly is the top step of the earlier stairway. Feature 5 indicates that the original ravelin wall closest to the fort was in a mirror-image configuration on either side of the then double stairway (this can also be seen in Map 4, Appendix 1). Above the old wall base, the deposit's latest dating item was an American gold dollar dated 1834.

The small portion of TS 1 not encompassed by Feature 5 was excavated in 5 levels to a depth of 3.38 MMSL (65 cm. below surface), where sterile white beach sand fill was encountered. That fill seems most likely to be the original ravelin fill material placed in 1682. The 5 levels above the sterile white fill (Tables 9 and 10) appear to constitute a deposit begun in the first Spanish period and continuing into the British period. Levels 3 to 5 contain 1750 or earlier material, and

Table 8. Ravelin Provenience Guide

Datum: 5.55 MMSL (All elevations given in meters above sea level)

FS#	Provenience	Top	Base	TPQ	Cultural Association
73	Level 1	4.03	3.88	Coin-1834 dollar	Spanish II-moder
78	Level 2	3.88	3.73	60 <sup>th</sup> of foot button	British period
82	Level 3	3.73	3.60	Creamware	"
86	Level 4	3.60	3.53	Delftware	"
90	Level 5	3.53	3.38	Puebla B/W	British/Spanish
79	Area 1, Level 1	3.74	3.59	Olive jar	"
80	Area 1, Level 2	3.59	3.44	Olive Jar	"
83	Area 2	3.62	3.60	no artifacts	-

Test Square 2

74	Level 1	3.92	3.82		
84-85	Level 2	3.80	3.65	Annular ware/ Pop top tab	disturbed Spanis II fill
89	Level 3	3.65	3.50	Late shell edged pearlware	"
94	Level 4	3.50	3.34	Pearlware	"
98-100	Level 5	3.35	3.20	Pearlware/tin foil	"
105	Level 6	3.20	3.05	Pearlware/cut nail	Spanish II Fill
108	Level 7	3.05	2.90	Transfer print pearlware	"
81	Area 1	3.70	3.31	Early painted pearlware	"
	Area 2	3.65		Electrical wire/ plain pearlware	"
88	Area 3	3.64	3.57	Annular ware	"
none	Area 4	3.43		no artifacts	"
none	Area 5	3.40		no artifacts	"
91	Area 6	3.40	3.23	Pearlware	"
none	Pit 4	3.65		no artifacts	"

Test Square 3

104	Zone 3	3.59	3.43	Olive Jar	Spanish II
106	Zone 4	3.43	3.25	Kaolin fragment	"
129	Zone 5	3.25	3.13	Transfer printed pearlware	"

Table 8, cont'd. Ravelin Provenience Guide

FS#	Provenience	Top	Base	TPQ	Cultural Association
128	Zone 6, Level 1	3.13	2.95	Transfer printed pearlware	Spanish II
131	Zone 6, Level 2	2.95	2.79	Annular ware	"
143	Zone 6, Level 3	2.79	2.73	Ironstone	"
144	Zone 7, Level 1	2.73	2.58	Creamware	British period
145	Zone 7, Level 2	2.58	2.43	San Agustin B/W	"
146	Zone 7, Level 3	2.43	2.22	B/W Delft	"
N/A	Feature 11	2.14	2.24	Powder Magazine floor	1762
92	Area 2	3.75		B/W Faience	British Period
93	Area 3	3.72		60 <sup>th</sup> afoot button	"
97	Area 4	3.62		Plain Majolica	"
101	Area 5	3.57		Puebla B/W	"
96	Area 6	3.59		UID Majolica	"
N/A	Feature 6	3.44	3.65	Powder Magazine Wall	1762
130	Area 7	2.95		Annular ware	Spanish II
147	Area 8 (Burned floor material)	2.30	2.20	Debased Scratch Blue Stoneware	British

a pit (Area 1) underlying level 3 contains only hispanic material. Levels 1 and 2 contain British through second Spanish period material, which is remarkably undisturbed considering the intensity of modern usage of the area.

Test Squares 2 and 3 provided evidence for the Spanish powder magazine. Tables 11-14 show the distribution of proveniences and cultural materials in these units.

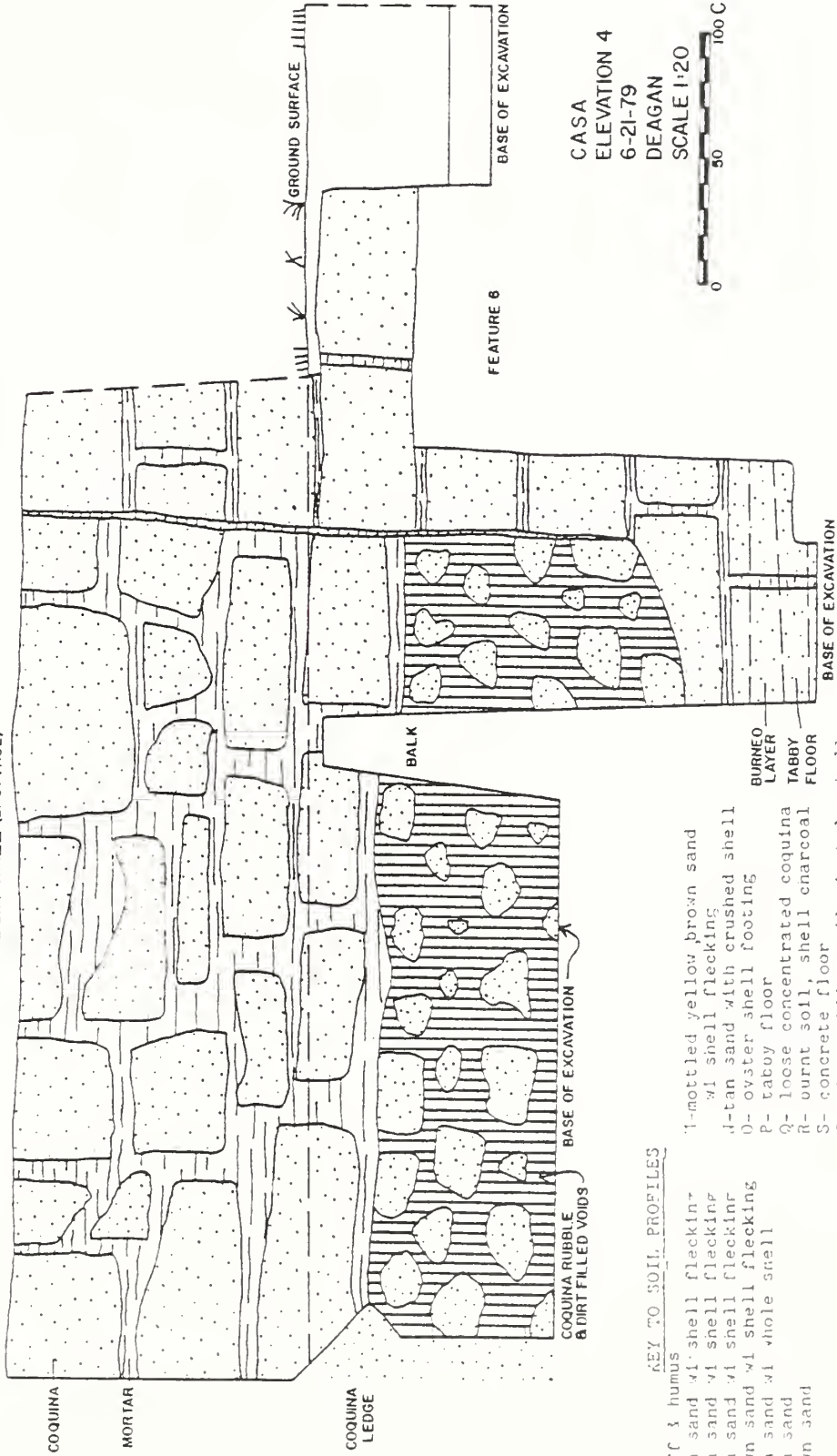
Feature 6 was located in TS 3, and is shown in Figures 8 and 11. This was a coquina block wall, undoubtedly the south wall of the powder magazine. The top was at an elevation 3.44 MMSL, some 46 cm. below surface. The feature is 1 meter wide, and extends to a depth of 2.14 MMSL (1.30 meters high). In the top of Feature 6, a rectangular postmold was cut into the stone. This measures 6 cm. by 12 cm., and was probably cut for the vaulted roof's wood support substructure. Thus it is implied that the arch for the powder magazine roof began at this point. It can be seen in Figure 11 that the top of the feature wall is approximately at the level of the top of the stone cordon on the ravelin's interior north wall. This cordon quite likely marks the level of the vaulted roof edge at the opposite end of the magazine from Feature 6.

At 1.30 meters (4.24 feet) below this juncture of the roof vault and the magazine walls, a tabby floor was encountered in Test Pit 3 (2.14 MMSL). This was designated Feature 11, and was 10 to 11 cm. thick. Below the floor was sterile white beach sand fill, extending at least 18 inches (core sampled). The floor was most likely built at the end of the

TEST SQUARE 2

TEST PIT 3

RAVELIN WALL (EAST FACE)



CASA  
ELEVATION 4  
6-21-79  
DEAGAN  
SCALE 1:20



KEY TO SOIL PROFILES

- A- modern duff & humus
- B- grey-brown sand w/ shell flecking
- C- med. brown sand w/ shell flecking
- D- dark brown sand w/ shell flecking
- E- light brown sand w/ shell flecking
- F- med. brown sand w/ whole shell
- G- med. brown sand
- H- light brown sand
- I- tan sand
- J- dark grey-brown sand
- K- old sterile sand
- L- mottled yellow, old, brown, tan sand
- M- mottled yellow brown sand
- N- tan sand with crushed shell
- O- ovate shell footing
- P- tabby floor
- Q- loose concentrated coquina
- R- burnt soil, shell charcoal
- S- concrete floor
- T- black midden soil w/ whole shell
- U- dark brown soil w/ whole shell
- V- dark brown, old soil w/ shells
- W- dark brown, old soil w/ shells

FIGURE 11

Ravelin, Test square 2 and Test pit 3  
soil profiles

first Spanish period. The floor extended up to Feature 6, and covered a toe projection of coquina extending out 35 cm. to the north of the wall, into the powder magazine area. The base of this toe was not excavated, but the 1763 map referred to above shows it in section as being exactly one-third the height of the total wall (thus it would have been approximately 43 cm. in depth, extending to an approximate elevation of .87 MMSL).

The fill of the two test units indicates that the powder magazine was probably used for some time by the British soldiers, and partially filled during the British period. Test Square 2 was excavated only to a depth of 2.90 MMSL (1.02 meters below surface) due to time and contract restrictions; while Test Square 3 was excavated to below the Feature 11 floor to a depth of 1.44 MMSL (2.46 meters below surface).

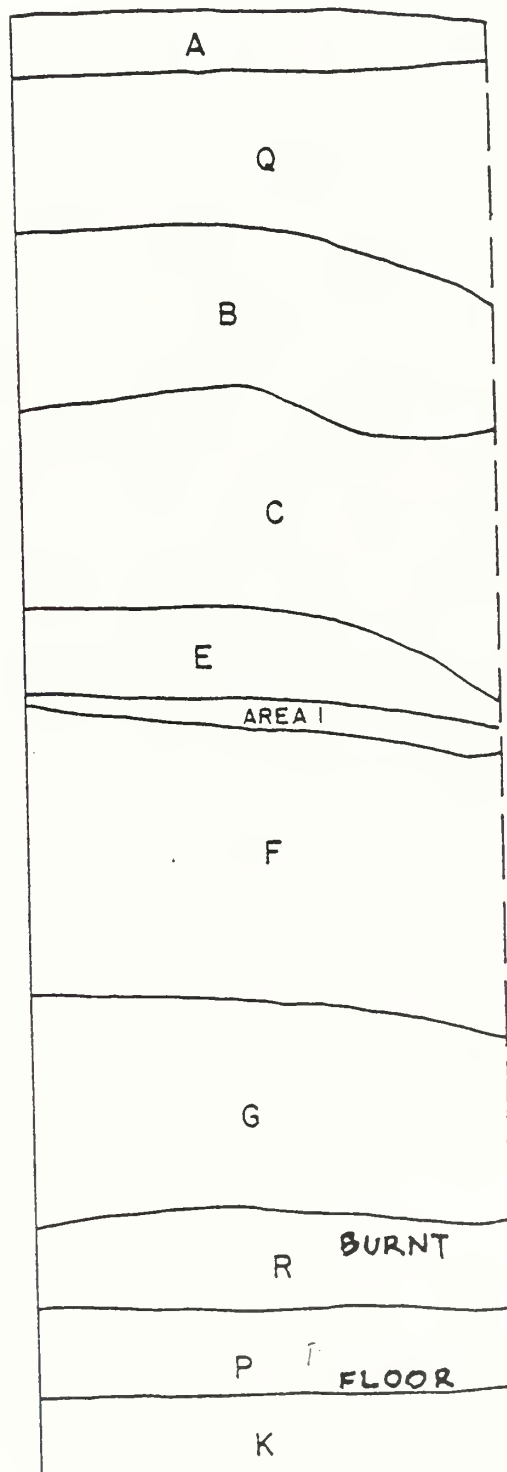
Directly above the tabby floor was a layer of burnt earth, wood and rubble, 15 cm. in depth and designated Area 8. This material was deposited after 1765, based on a TPQ provided by Debased Scratch Blue Stoneware, and placing it firmly in the British period (1763-1781). The layer itself probably represents a burning of the powder magazine vault, which then fell onto the floor; or simply a deposit of burned secondary fill in the disused powder magazine.

Above the burned layer was Zone 7, a grey-brown soil fill with very concentrated garbage debris in it. This extended from 2.73 MMSL to 2.22 MMSL, over the burnt layer. This zone was also clearly of British period deposit (Table 13.



TEST PIT 3  
NORTH PROFILE

1.5 M.B.D.



## KEY TO SOIL PROFILES

- A- modern duff & humus
- B- grey-brown sand w/ shell flecking
- C- med. brown sand w/ shell flecking
- D- dark brown sand w/ shell flecking
- E- light brown sand w/ shell flecking
- F- med. brown sand w/ whole shell
- G- med. brown sand
- H- light brown sand
- I- tan sand
- J- dark grey-brown sand
- K- gold sterile sand
- L- mottled yellow, gold, brown, tan sand
- M- mottled yellow, brown sand w/ shell flecking
- N- tan sand with crushed shell
- O- oyster shell footing
- P- taccoy floor
- Q- loose concentrated coquina
- R- burnt soil, shell charcoal
- S- concrete floor
- T- black midden soil w/ whole shell
- U- dark brown soil w/ whole shell
- V- dark brown, gold soil w/ shells

CASA RAVELIN  
STRAT RECORD 6  
6-22-79  
DEAGAN  
SCALE 1:10

0 10 20 30 CM

FIGURE 13

Ravelin, Test Pit 3  
North Profile



FIGURE 14

Feature 6 and 11: Ravelin Powder Magazine

Zone 7, Levels 1-3).

The zones above this level in both TP 3 and TS 2 are clearly of second Spanish period affiliation (TS 2 was excavated, as noted above, to a depth of only 2.90 MMSL; which is equivalent in TP 3 to Zone 6, Level 2.). All Zone 2 through 6 deposits contained pearlware and annular wares, which date solidly within the second Spanish period.

The north wall of TS 2 (in the northeast corner of the ravelin's west section) revealed an inside coquina ledge at 3.70 MMSL (20 cm. below ground surface). This is the ledge noted above as the probable point of the powder room vault and north wall juncture. Below this ledge, the east wall of the ravelin itself was extremely unstable in appearance, with irregular coquina blocks and numerous dirt-filled voids (figure 12). TS 3 excavation revealed that this void extended for 1.10 meters downward (1.4 meters below ground surface; and 45 cm. above the tabby floor). This rubble void was apparently the result of the powder room's east wall partially collapsing toward the end of the British period. The powder room was then filled in with half a meter of soil during the British period. The remaining fill was added and the wall repaired during the second Spanish period. The top of the British fill corresponds to the base of the void; so it is also possible that the powder room was partially filled in during the British period; and then the east wall caved in and was repaired and filled during the second Spanish period.

In any case, the rubble portion of the wall was constructed

during the second Spanish period, when the west stairway was filled in; and the ravelin wall closest to the fort assumed its present configuration. At that time, the grade surface was probably at the top of the coquina rubble-dirt void wall section, at 4.05 MMSL (30 cm. below present surface). Figure 11 shows that it is above this elevation that the wall assumes a cut and mortared, rough course masonry construction, which is plastered down to the 4.05 MMSL. All soil deposits associated with the powder magazine fill down to the top of Zone 7 (British deposit) contain artifacts of the second Spanish period and no later; firmly dating the rubble void and its fill to that period.

In summary, excavations revealed the locations and original configurations of the original ravelin stairway; which was in a mirror image to that present today. Apparently the filling in of the stairs was done during the second Spanish period.

The powder magazine of the first Spanish period was located, with the south wall of that room (Feature 6) 3.5 meters south of the ravelin north wall. The wall was 1 meter thick with a rectangular post mold cut into the top. The powder magazine was floored in tabby 15 cm. thick (Feature 11), 1.30 meters below the juncture of the powder magazine support walls and roof vault.

It was partially filled in during the British period, and the remainder was filled during the second Spanish period. The east wall of the powder magazine also collapsed at some point, most probably during the second Spanish period. This



Table 9. Ravelin, Test Square 1: Ceramics

Artifact Description	Level 2	Area 1 Level 1	Area 1 Level 2	Level 3	Area 2	Level
<u>Hispanic</u>						
Puebla Blue on White	1 .034					
Aranama Polychrome				1 .053		
Castillo Polychrome						
Olive Jar, unglazed				1 .053		
Olive Jar, glazed	2 .069		1 1.000			
El Morro						
TOTAL	3 .103	-	1 1.000	2 .105	-	-
<u>Other European</u>						
Plain delft	1 .034					1 .
Blue on White delft	2 .069					2 .
Slipware	2 .069			1 .053		
Bisque	1 .034					
Creamware	4 .138			1 .053		
Jackfield ware				2 .105		
Grey salt-glazed stoneware				1 .053		
White salt-glazed stoneware	5 .172					
Nottingham stoneware	1 .034					
Rhenish stoneware						1 .
TOTAL	14 .483	-	-	5 .263	-	4 .
<u>Aboriginal</u>						
St. Johns Plain	2 .069			2 .105		1 .0
St. Johns Stamped						1 .0
San Marcos Plain	4 .138	3 .750		1 .053		6 .2
San Marcos Stamped	2 .069			1 .053		3 .1
UID shell-tempered discards	1 .034	1 .250		8 .421	1 1.000	9 .3
UID Aboriginal	1 .034					
TOTAL	10 .345	4 1.000	-	12 .632	1 1.000	20 .8
TOTAL CERAMICS	29 .998	4 1.000	1 1.000	19 1.002	1 1.000	24 1.0

Table 9, cont'd. Ravelin, Test Square 1: Ceramics

Artifact Description	Level 5				
<u>Hispanic</u>					
Puebla Blue on White	3	.083			
Aranama Polychrome					
Castillo Polychrome	1	.028			
Olive Jar, unglazed	1	.028			
Olive Jar, glazed					
El Morro	1	.028			
TOTAL	6	.167			
<u>Other European</u>					
Plain delft					
Blue on White Delft					
Slipware	1	.028			
Bisque	1	.028			
Creamware					
Jackfield ware					
Grey salt-glazed stoneware					
White salt-glazed stoneware					
Nottingham stoneware					
Rhenish stoneware					
UID coarse earthenware					
TOTAL	2	.056			
<u>Aboriginal</u>					
St. Johns Plain	2	.056			
St. Johns Stamped					
San Marcos Plain	1	.028			
San Marcos Stamped	10	.278			
UID shell-tempered	1	.028			
discards	14	.390			
TOTAL	28	.778			
TOTAL CERAMICS	36	1.002			



Table 10. Ravelin, Test Square 1: Non-ceramic material culture.

Artifact Description	Level 2	Area 1 Level 1	Area 1 Level 2	Level 3	Area 2	Level
<u>Glass</u>						
green	65			15		
clear	29			7		4
brown						
aqua						
<u>Iron</u>						
whole nail	51			11		2
nail fragment	7			26		4
tack						
wire nail	4					
strap fragment	17					
spike fragment	1					
flat iron fragment	1	1				
gun barrel fragment	1					
<u>Brass</u>						
nail	1					
pin	1	1				
lacing tip	1					
furniture hinge		1				
<u>Lead</u>						
musket ball	1					
<u>Buttons</u>						
military brass	2					
bone	5					
<u>Pipes</u>						
Flint	2					1
Chert	1			2		
Wirewound bead	1					

Table 10, cont'd. Ravelin, Test Square 1: Non-ceramic material culture.

Artifact Description	Level 5					
<u>GLASS</u>						
green	2					
clear	1					
brown	2					
aqua	1					
<u>Iron</u>						
whole nail						
nail fragments	4					
tack						
wire nail						
strap fragment						
spike fragment	1					
flat iron frag- ment						
gun barrel fragment						
<u>Brass</u>						
nail						
pin						
lacing tip						
furniture hinge						
<u>Lead</u>						
musket ball						
<u>Buttons</u>						
military brass						
bone						
<u>Pipes</u>						
Flint	2					
Chert						
Wirewound Bead						

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Table 11. Ravelin, Test Square 2: Ceramics

Artifact Description	Level 2	Area 2	Area 3	Level 3	Area 6	Level 4 SW $\frac{1}{4}$
<u>Hispanic</u>						
Columbia Plain						
Ichitucknee Blue on Blue			1 .125			
Abo Polychrome						
UID Plain majolica				1 .022		
UID Blue on white majolica						
Olive Jar, unglazed.				3 .067		1 .04
Olive Jar, glazed		2 .400		2 .044		
Marine Ware						
Mexican Red Film						
El Morro				2 .044		
Rey ware				3 .067		
TOTAL	-	2 .400	1 .125	11 .244	-	1 .04
<u>Other European</u>						
Plain delft						1 .04
Black lead-glazed coarse earthenware						
Green lead-glazed coarse earthenware				1 .022		
unglazed coarse earthenware					1 .200	
UID tin enamelled coarse earthenware				1 .022		
Buckley						
Slipware						
Creamware	1 .500			7 .156	2 .400	
Plain pearlware		1 .200		3 .067	1 .200	
Early painted pearlware			4 .500	3 .067	1 .200	1 .04
Late painted pearlware				1 .022		
Transfer-printed pearlware						

Table 11, cont'd. Ravelin, Test Square 2: Ceramics

Artifact Description	Level 5 SE $\frac{1}{4}$	Level 5 NE $\frac{1}{4}$	Level 6 SE $\frac{1}{4}$	Level 7 SE $\frac{1}{4}$	Level 8 SE $\frac{1}{4}$	Area 1
<u>Hispanic</u>						
Columbia Plain				1 .019		
Ichitucknee Blue on Blue						
Abo Polychrome						1 .333
UID Plain majolica			1 .031		1 .029	
UID Blue on white majolica			1 .031			
Olive Jar, unglazed	1 .042	1 1.000		1 .019	4 .114	
Olive Jar, glazed					2 .057	
Marine Ware				3 .057		
Mexican Red Film					1 .029	
El Morro			2 .063	1 .019		
Rey ware	1 .042		1 .031	3 .057	1 .029	
TOTAL	2 .083	1 1.000	5 .156	9 .170	9 .257	1 .333
<u>Other European</u>						
Plain delft						
Black lead-glazed coarse earthenware			2 .063		1 .029	
Green lead-glazed coarse earthenware						
Unglazed coarse earthenware				5 .094	1 .029	
UID tin enamelled coarse earthenware						
Buckley	2 .083					
Slipware	1 .042		1 .031	2 .038	4 .114	
Creamware	2 .083		7 .219	11 .208	7 .200	
Plain pearlware			2 .063			
Early painted pearlware	2 .083			1 .019	2 .057	1 .333
Late painted pearlware						
Transfer-printed pearlware				3 .057		

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Table 11, cont'd.

Artifact Description	Level 2	Area 2	Area 3	Level 3	Area 6	Level 4 SW $\frac{1}{4}$
Polychrome painted pearlware						
Annular ware	1 .500					
UID Burned Refined Earthenware			1 .125			
TOTAL	2 1.000	3 .600	6 .750	27 .600	5 1.000	3 .13
<u>Aboriginal</u>						
St. Johns Plain		1 .200	1 .125	4 .089		5 .21
St. Johns Stamped				1 .022		1 .04
San Marcos Plain				3 .067		2 .08
San Marcos Stamped		1 .200		1 .022		5 .21
San Marcos handle						
UID Aboriginal						2 .08
discards			1 .125	9 .200		5 .21
TOTAL	-	2 .400	2 .250	18 .400	-	20 .87
TOTAL CERAMICS	2 1.000	5 1.000	8 1.000	45 1.000	5 1.000	23 .99

Table 11, cont'd.

Artifact Description	Level 5 SE $\frac{1}{4}$	Level 5 NE $\frac{1}{4}$	Level 6 SE $\frac{1}{4}$	Level 7 SE $\frac{1}{4}$	Level 8 SE $\frac{1}{4}$	Area 1
Polychrome painted pearlware			1 .031			
Annular ware			1 .031		1 .029	
UID Burned Refined Earthenware						
TOTAL	9 .375	1 1.000	19 .594	21 .396	25 .714	2 .66
<u>aboriginal</u>						
St. Johns Plain	4 .167		4 .125	4 .075	1 .029	
St. Johns Stamped	1 .042		4 .125	2 .038	1 .029	
San Marcos Plain			2 .063		4 .114	
San Marcos Stamped	10 .417		2 .063	11 .208	3 .086	1 .33
San Marcos Hnadle			1 .031			
UID Aboriginal discards				5 .094	1 .029	
TOTAL	15 .625	-	13 .406	22 .415	10 .286	1 .33
TOTAL CERAMICS	24 1.001	1 1.000	32 1.001	53 1.002	35 1.003	3 1.00



Table 12. Ravelin, Test Square 2: Non-ceramic material culture (+-indicates presence)

Artifact Description	Level 2	Area 2	Area 3	Level 3	Area 6	Level 4 SW $\frac{1}{4}$
<u>Glass</u>						
green			1	14	3	
light green						3
clear		3	1	9	2	4
clear flat						
brown	2	7				
aqua						
<u>Iron</u>						
whole nail		12	1	2	3	2
nail fragment			5	24		1
cut nail						
cut nail fragment						
tack				1		
spike fragment						
eye fastener						
buckle frame						
ring						
scissors						
strap fragment	1					
hook				1	1	
slag		+	+	+		+
flakes		+			+	+
lumps			+	+		+
fragments		+		+		+
<u>Brass</u>						
eye		1				
pin				1		
loop				1		
spring						
copper chain						1
copper sheet						1
fragment						
<u>Lead</u>						
musket ball				1		

Table 12, cont'd. Ravelin, Test Square 2: Non-ceramic material culture. (+-indicates presence)

Artifact Description	Level 5 se $\frac{1}{4}$	Level 5 SE $\frac{1}{4}$	Level 6 SE $\frac{1}{4}$	Level 7 SE $\frac{1}{4}$	Level 8 SE $\frac{1}{4}$	Area 1
<u>Glass</u>						
green	6		16	29	19	
light green				1		1
clear	2		11	10		
clear flat						
brown						
aqua					3	1
<u>Iron</u>						
whole nail	8			8	16	1
nail fragment	8		15	22	21	2
cut nail			2			
cut nail fragment						
tack				1		
spike fragment			3			
eye fastener				1	1	
buckle frame					1	
ring						1
scissors			1			
strap fragment				3		
hook						
slag	+					
flakes			+	+	+	
lumps			+	+	+	
fragments	+			+	+	
<u>Brass</u>						
eye				1		
pin						
loop						
spring	2					
copper chain						
copper sheet						
fragment				+		
<u>Lead</u>						
musket ball						

Table 12, cont'd.

Artifact Description	Level 2	Area 2	Area 3	Level 3	Area 6	Level 4 SW $\frac{1}{4}$
lead						
<u>Pipes</u>						
Kaolin clay bowl	1			2	2	
Kaolin stem 4/64"				3		
Kaolin stem 5/64"					2	
Aboriginal bowl						
<u>Bone</u>						
comb fragment				1		
button blank						
<u>Buttons</u>						
bone		1				
brass						
<u>Rock</u>						
flint flakes				2		
chert						1
flint						
basalt						
quartz						
coal		+				
UID rock						
clay			+	+		+
<u>Construction material</u>						
coquina		+	+			+
tabby				+		
mortar			+	+		
plaster						
daub		+				
flat tile						+
brick		+	+	+		+
Possible trigger						
Raspberry bead						
Pop top rings	2					
Tin foil						
electrical wire		1				

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Table 12, cont'd.

Artifact Description	Level 5 SE $\frac{1}{4}$	Level 5 SE $\frac{1}{4}$	Level 6 SE $\frac{1}{4}$	Level 7 SE $\frac{1}{4}$	Level 8 SE $\frac{1}{4}$	Area 1
lead				+		
<u>Pipes</u>						
Kaolin clay bowl						
Kaolin stem 4/64"	1					
Kaolin stem 5/64"						
Aboriginal bowl				1		
<u>Bone</u>						
comb fragment						
button blank	1				1	
<u>Buttons</u>						
bone				4	1	
brass	1			1		
<u>Rock</u>						
flint flakes						
chert			1			
flint	1		1	1	1	
basalt			+			
quartz			+			
coal				+		
UID rock			+	+	+	
clay					+	
<u>Construction material</u>						
coquina	+			+		+
tabby					+	+
mortar			+	+	+	+
plaster	+			+		
daub				+		
flat tile						
brick	+		+	+	+	+
Possible trigger				1		
Raspberry bead			1			
Pop top rings						
Tin foil		1				
electrical wire						

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Table 13. Ravelin, Test Pit 3: Ceramics

Artifact Description	Area 2	Area 3 Level 1	Area 4	Area 5	Area 6 Level 1	Area 7
<u>Hispanic</u>						
Ichitucknee Blue on blue						
San Luis B/W	1 .167					
Puebla B/W				1 .100		
San Augustin Blue on white						
UID Plain majolica		1 .040	1 .500			
UID Blue on white majolica					1 .200	
UID Polychrome majolica						
Olive Jar, unglazed	1 .167				1 .200	5 .12
Olive Jar, glazed					1 .200	
El Morro						1 .02
Rey ware						
TOTAL	2 .333	1 .040	1 .500	1 .100	3 .600	6 .14
<u>Other European</u>						
Plain delft						
Blue on white delft		1 .040		1 .100		
Polychrome delft						1 .02
Blue on white faience	1 .167					
Plain faience						
N. Devon gravel- tempered ware						
Slipware						
clear lead-glazed coarse earthenware		1 .040				
unglazed coarse earthenware						2 .04
Black lead-glazed coarse earthenware						1 .02
UID polychrome lead- glazed coarse earthenware						

Table 13, cont'd. Ravelin, Test Pit 3, Ceramics

Artifact Distribution	Area 8	Level 2	Level 3	Level 4	Zone 6 Level 1	Zone 6 Level 2
<u>Hispanic</u>						
Ichtucknee Blue on Blue				3 .036		
San Luis B/W						
Puebla B/W						
San Augustin Blue on White						
UID Plain Majolica				2 .024		
UID Blue on white majolica						
UID Polychrome Majolica						
Olive Jar, unglazed	1 .111		9 .108	8 .348		
Olive Jar, glazed			4 .048			18 .29
El Morro						
Rey ware			1 .012			5 .08
TOTAL	-	1 .111	-	19 .229	8 .348	23 .03
<u>Other European</u>						
Plain delft						1 .01
Blue on white delft						
Polychrome delft						
Blue on white faience				2 .024		
Plain faience				1 .012		
N. Devon gravel tempered ware						
Slipware						4 .06
clear lead-glazed coarse earthenware	1 .111					
unglazed coarse earthenware	3 .333			2 .024		2 .03
Black lead-glazed coarse earthenware						4 .06
UID polychrome lead- glazed coarse earthenware						



Table 13, cont'd. Ravelin, Test Pit 3: Ceramics

Artifact Description	Zone 6 Level 3	Zone 7 Level 1	Zone 7 Level 2	Zone 7 Level 3		
<u>Hispanic</u>						
Ichtucknee Blue on Blue						
San Luis B/W						
Puebla B/W						
San Augustin Blue on white			1 .050			
UID Plain Majolica			1 .050	1 .027		
UID Blue on White Majolica	1 .016					
UID Polychrome Majolica	1 .016					
Olive Jar, unglazed	9 .145		1 .050			
Olive Jar, glazed	10 .161					
El Morro						
Rey ware						
TOTAL	21 .339	-	3 .150	1 .027		
<u>Other European</u>						
Plain delft						
Blue on White Delft				2 .054		
Polychrome Delft						
Blue on white Faience						
Plain Faience						
N. Devon gravel- tempered ware	3 .048					
Slipware	2 .032					
clear lead-glazed coarse earthenware		1 .167		1 .027		
unglazed coarse earthenware	1 .016					
Black lead-glazed coarse earthenware						
UID polychrome lead- glazed coarse earthenware						

Table 13, cont'd.

Artifact Description	Area 2	Area 3 Level 1	Area 4	Area 5	Area 6 Level 1	Area 7
Bisque	1 .167					
UID tin-enamelled coarse earthenware						2 .04
Jackfield		2 .080				
Creamware						4 .09
Plain pearlware						6 .14
Early painted pearlware						
Late painted pearlware						
Transfer-printed pearlware						
Annular ware						1 .02
Ironstone						
White salt glazed stoneware		1 .040				1 .02
grey salt-glazed stoneware						
Debased scratch blue stoneware						
English Porcelain		1 .040				
TOTAL	2 .333	6 .240	-	1 .100	-	18 .43
<u>Aboriginal</u>						
St. Johns Plain				2 .200	1 .200	1 .02
St. Johns Stamped		1 .040		1 .100	1 .200	
San Marcos Plain	1 .167	2 .080		3 .300		4 .09
San Marcos Stamped		3 .120				5 .12
UID sand-tempered			1 .500			
Lamar-like Bold Incised						
Jefferson Stamped						
San Marcos pipe bowl fragment						
discards	1 .167	12 .480		1 .100		7 .17
TOTAL	2 .333	18 .720	1 .500	7 .702	2 .400	17 .44
TOTAL CERAMICS	6 .999	25 1.000	2 1.000	10 1.000	5 1.000	41 .99

Table 13,<sup>88</sup> Cont'd.

Artifact Description	Area 8		Level 2		Level 3		Level 4		Zone 6 Level 1		Zone 6 Level 2	
Bisque												
UID tin-enamelled coarse earthenware											1	.01
Jackfield											4	.06
Creamware							3	.036	1	.043	16	.26
Plain Pearlware							1	.012	1	.043		
Early painted pearlware							4	.048	1	.043		
Late painted pearlware							4	.048				
Transfer-printed pearlware							1	.012				
Annular ware											5	.08
Ironstone												
White salt-glazed stoneware												
Grey salt-glazed stoneware											1	.01
Debased scratch blue stoneware	1	1.000										
English porcelain												
TOTAL	1	1.000	4	.444	-		18	.217	3	.130	38	.62
<u>Aboriginal</u>												
St. Johns Plain			2	.222	1	.250	3	.036	3	.130		
St. Johns Stamped							4	.048				
San Marcos Plain					1	.250	9	.108				
San Marcos Stamped			1	.111			4	.048				
UID sand-tempered			1	.111								
Lamar-like Bold Incised							3	.036				
Jefferson Stamped												
San Marcos pipe bowl fragment												
discards							17	.205				
TOTAL	-		4	.444	2	.500	46	.554	12	.522	-	
TOTAL CERAMICS	1	1.000	9	.999	4	1.000	83	.998	23	.998	61	1.000

Table 13, cont'd.

Artifact description	Zone 6 Level 3	Zone 7 Level 1	Zone 7 Level 2	Zone 7 Level 3		
Bisque	2 .032					
UID tin-enamelled coarse earthenware	1 .016					
Jackfield						
Creamware	7 .113	2 .333		1 .027		
Plain Pearlware	3 .048					
Early painted pearlware	1 .016					
Late painted pearlware						
Transfer-printed pearlware						
Annular ware						
Ironstone	3 .048					
White salt-glazed stoneware				1 .027		
Grey salt-glazed stoneware						
Debased scratch blue stoneware						
English Porcelain	2 .032					
TOTAL	25 .403	3 .500	-	4 .108		
<u>Aboriginal</u>						
St. Johns Plain		1 .167	5 .250	5 .135		
St. Johns Stamped				2 .054		
San Marcos Plain	12 .194		7 .350	23 .622		
San Marcos Stamped		2 .333		1 .027		
UID sand-tempered						
Lmar-like Bold Incised						
Jefferson Stamped			1 .027			
San Marcos pipe bowl fragment	4 .065					
discards			4 .200	1 .027		
TOTAL	16 .258	3 .500	17 .850	32 .865		
TOTAL CERAMICS	62 .998	6 1.000	20 1.000	37 1.000		

Table 14. Ravelin, Test Pit 3: Non-Ceramic Material Culture  
(+-indicates presence)

Artifact Description	Area 2	Area 3 Level 1	Area 4	Area 5	Area 6 Level 1	Area
<u>Glass</u>						
green	2	14		3	3	11
light green						
clear	3	4				
clear flat						
aqua						9
amber						
<u>Iron</u>						
whole nails			2	1		10
nail fragments	6	23		8		42
cut nails		14				
tack	1	2				
spike fragment						1
Jaw harp				1		
strap fragment						
bands						
pintel hinge						
scabbard tip						
needle						1
slag			+			
flakes/lumps	+		+	+	+	+
<u>Lead</u>						
Bullet						
shot						
musket ball						
<u>Brass</u> straight pin						2
cuff-link						
buckle						
eye fastener						
key hole cover						
Wires						
Scrap						+
Copper eye fastener						
copper fragments						

Table 14, cont'd. Ravelin, Test Pit 3: Non-Ceramic Material Culture  
(+-indicates presence)

Artifact Description	Area 8	Level 2	Level 3	Level 4	Zone 6 Level 1	Zone Level
<u>Glass</u>						
green	2	1	5	27	23	27
light green						
clear			1	7	9	2
clear flat						
aqua				7		
amber						
<u>Iron</u>						
whole nails	11	3	9	26	16	22
nail fragments	64				15	46
cut nails						
tack						2
spike fragment	1					
Jaw harp						
strap fragment				3	5	9
bands						
pintel hinge					1	
scabbard tip					1	
needle						
slag			+			
flakes/lumps	+	+	+	+	+	+
<u>Lead</u>						
bullet						1
shot			1			1
musket ball		1				
<u>Brass</u>						
straight pin						
cuff-link						
buckle						
eye fastener						
key hole cover						
wires						
scrap						
copper eye fastener						1
copper fragments						+



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Table 14, cont'd. Ravelin, Test Pit 3: Non-Ceramic Material Culture (+-indicates presence).

Artifact Description	Zone 6 Level 3	Zone 7 Level 1	Zone 7 Level 2	Zone 7 Level 3		
<u>Glass</u>						
green	20	3				
light green	5		3			
clear	15		1	7		
clear flat	15		12			
aqua				1		
amber				1		
<u>Iron</u>						
whole nails	27	1	1	30		
nail fragment	57			140		
cut nails						
tack				1		
spike fragment				2		
Jaw harp						
strap fragment	2					
bands			3			
pintel hinge						
scabbard tip						
needle						
slag						
flakes/lumps	+	+	+	+		
<u>Lead</u>						
Bullet						
shot						
musket ball						
<u>Brass</u>						
straight pin	1					
cuff-link	2					
buckle	1					
eye fastener	1					
key-hole cover				1		
wires	2					
scrap						
copper eye fastener						
copper fragments	+					

93  
Table 14, cont'd.

Artifact Description	Area 2	Area 3 Level 1	Area 4	Area 5	Area 6 Level 1	Area
<u>Pipes</u>						
Kaolin clay stem		1				
Kaolin clay bowl		1				
Moravian bowl						
Aboriginal Pipe						
<u>Worked Bone</u>						
bone comb						
button blank		1				
worked bone						
<u>Buttons</u>						
Bone						
Bone and copper						
copper						
brass						1
military brass		1				
<u>Rock</u>						
flint		1				3
worked flint						
chert			2			2
worked chert						
slate			1			
Pewter handle						
Spall						
<u>Construction Material</u>						
coquina			+		+	+
tabby						
mortar	+	+			+	+
plaster						
brick	+	+			+	+
daub				+		
slate						
Clay		+				
Hone or whetstone						
charcoal		+			+	

94  
Table 14, cont'd.

Artifact Description	Area 8	Level 2	Level 3	Level 4	Zone 6 Level 1	Zone Level
<u>Pipes</u>						
Kaolin clay stem	1			2	3	9
Kaolin clay bowl						
Moravian bowl					2	
Aboriginal Pipe						
<u>Worked Bone</u>						
bone comb						
button blank						
worked bone						1
<u>Buttons</u>						
Bone					4	4
Bone and copper						
Copper	2				1	
brass				1	2	
military brass						
<u>Rock</u>						
Flint				7	3	1
Worked flint						
Chert						
Worked chert						
slate						
Pewter handle				1		
Spall						1
<u>Construction Material</u>						
coquina	+	+	+	+	+	+
tabby			+			+
mortar	+	+	+	+	+	
plaster						
brick			+	+	+	+
daub						
slate			+	+	+	
Clay						
Hone or whetstone						
charcoal		+	+	+	+	+

95  
Table 14, cont'd.

Artifact Description	Zone 6 Level 3	Zone 7 Level 1	Zone 7 Level 2	Zone 7 Level 3		
<u>Pipes</u>						
Kaolin clay stem	6		1	1		
Kaolin clay bowl	1					
Moravian bowl						
Aboriginal bowl	1					
<u>Worked bone</u>						
bone comb	1					
button blank						
worked bone						
<u>Buttons</u>						
Bone	10					
Bone and copper	2					
Copper						
Brass						
Military brass						
<u>Rock</u>						
Flint	2					
worked flint						
Chert						
Worked chert			1			
Pewter handle						
Spall						
<u>Construction Material</u>						
coquina	+			+		
tabby	+					
mortar				+		
plaster						
brick	+		+			
daub						
slate						
Clay	+			+		
Hone or whetstone	1					
Charcoal	+	+				

was repaired with a rubble and dirt packed construction up to a grade level 30 cm. below that of 1979.

Sub-grade walls were observed on site by the project architect, and evaluated in his reports.

### Water Battery Excavations

Excavations were carried out in the (east) water battery for the following purposes:

1. To observe the nature of the fort's exterior foundation system, and to check the sub-grade condition of the scarp in the water battery.
2. To look for evidence of structures in the area of the water battery between the fort wall and the shot furnace.
3. To locate the previous moat surface and recover material discarded there.
4. To observe the construction methods and sub-grade conditions of the shot furnace.

In order to meet these objectives, two units were excavated in the water battery in the locations shown in Figure 15, one adjacent to the fort's eastern scarp; and one encompassing the southwest corner of the shot furnace. Figure 15 shows the locations of the units, while Figures 16 to 19 show profiles of excavated areas. Table 15 lists the proveniences and affiliations excavated in the water battery, and Tables 16 to 19 show the artifact distributions from these proveniences.

When the Castillo was originally constructed, the water battery was a moat. The moat was filled in to form the present battery during the American period, in about 1843. The shot





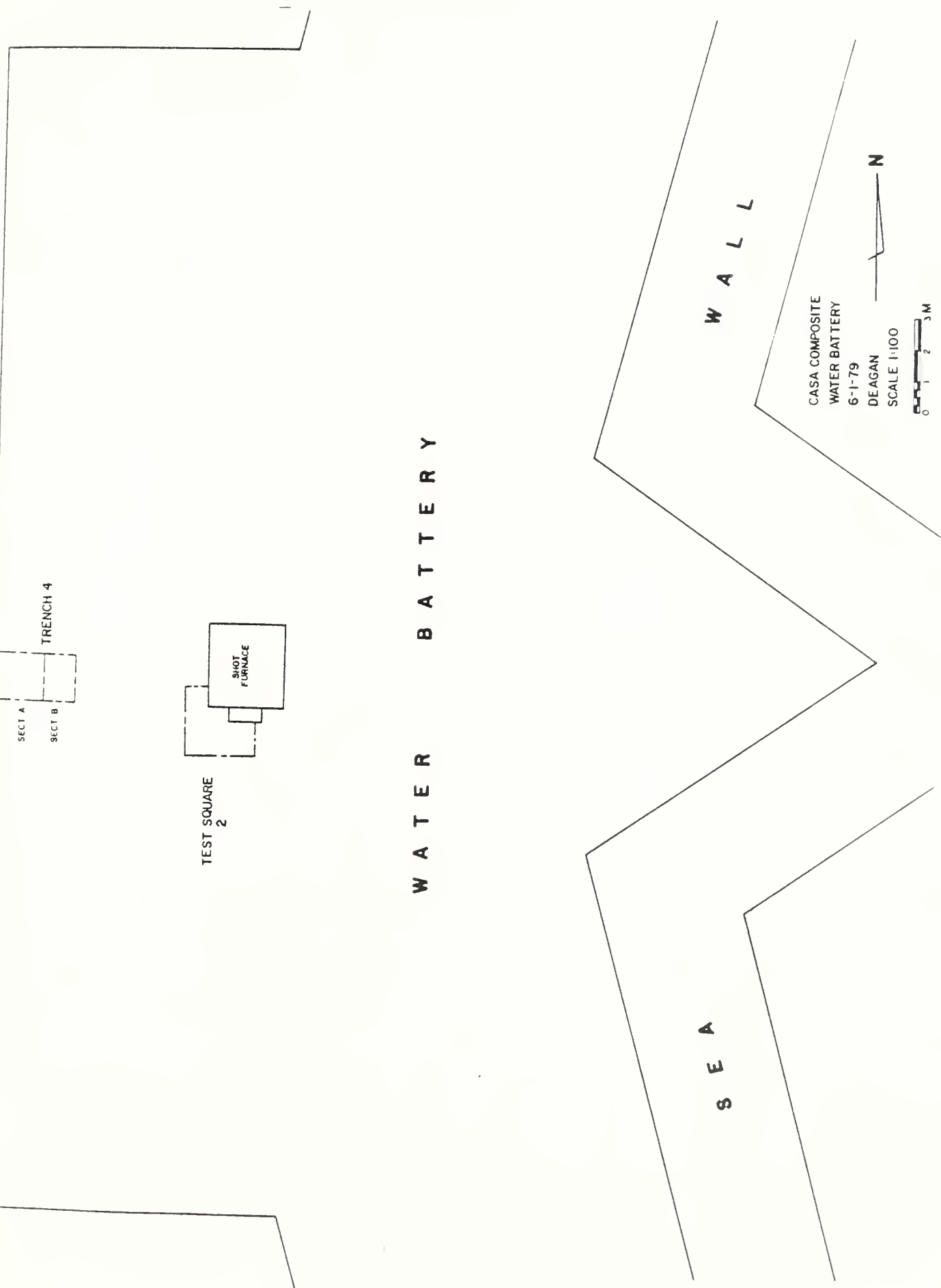


FIGURE 15. Locations of Test Units in the Water Battery

furnace was constructed circa . Thus the sub-grade deposits in this area are primarily of interest during the American period. During that time, stables are believed to have been present in this area (Luis Arana, personal communication, CASA, 1979). Several cut holes in the fabric of the east scarp of the fort, directly opposite the shot furnace and approximately two meters above present grade, may be related to such structures, however archeological investigations yielded no evidence to support this supposition; or, indeed, to suggest that any activities other than those related strictly to defense, took place in the water battery.

Test Trench 1 was established at a right angle to the fort scarp, extending to the shot furnace. Due to time and contract restraints, excavation was carried out only in those sections adjacent to adjacent to the scarp and the shot furnace. Conditions of the sub-surface walls for both structures were checked on site by the project architect, and are included in his reports.

Trench 1, Section A (adjacent to the fort scarp) yielded some interesting data about the foundation construction and the level of the moat at the time of its filling during the American period.

Previous investigations at the Castillo by Albert Manucy (1940) and Thor Borreson (1941) also addressed these questions and the data from those investigations corresponds closely to that revealed in 1979, and will be considered in more detail below.

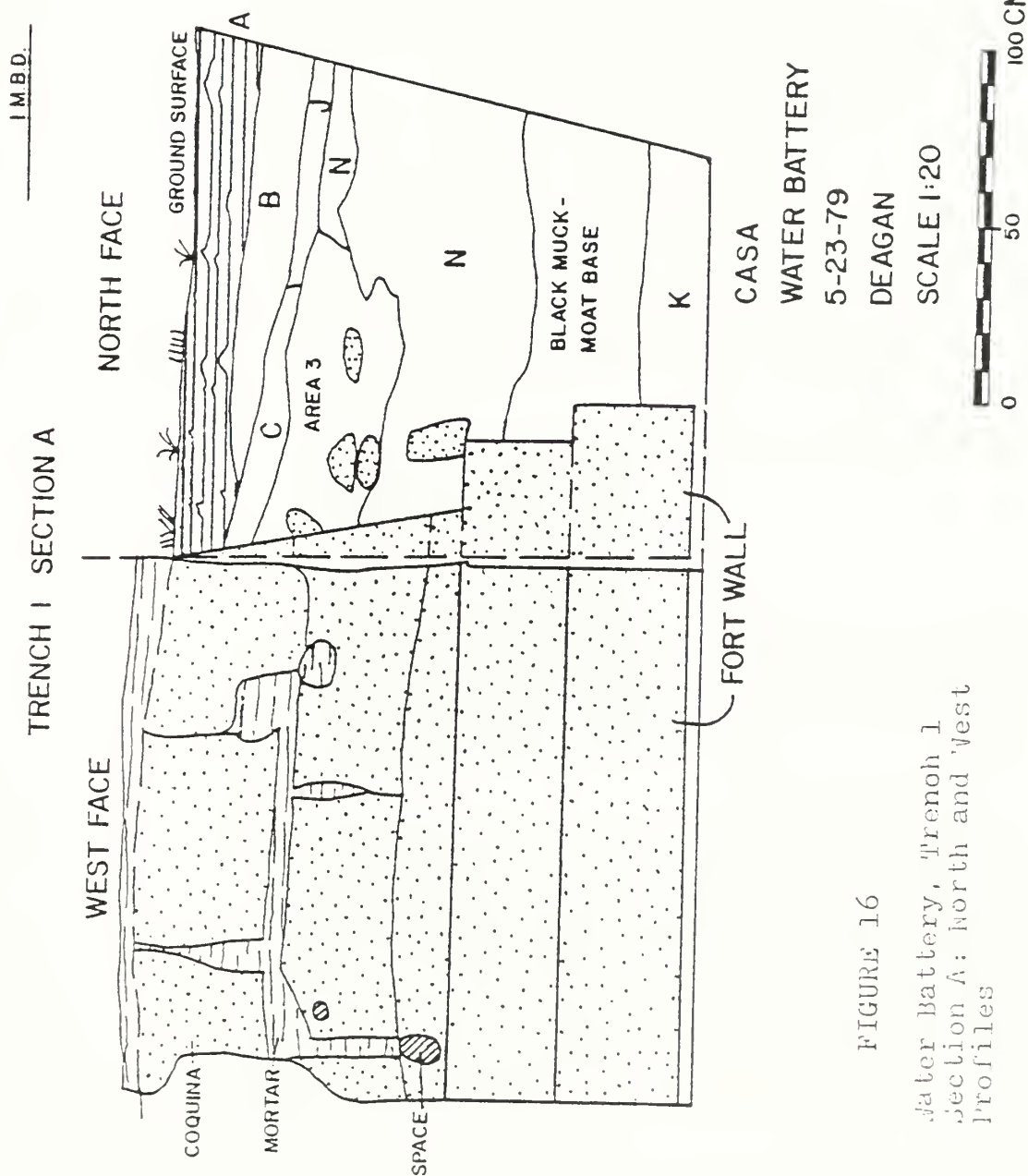


FIGURE 16

Water Battery, Trench 1  
Section A: North and West  
Profiles



FIGURE 17

Sub-grade foundation of scarp in Water Battery



more detail below.

Figures 16 and 17, and Tables 16 and 17 show the stratigraphic situation and artifact distributions adjacent to the fort's exterior east scarp face. Ground surface in this area is at 2.33 MMSL. The old moat surface (Zone 6) was encountered at 1.41 MMSL, or 92 cm. below present ground surface. This was a layer of black muck and mud, 30 cm. thick, and resting on yellow-white sterile sand. This old moat base layer contained artifacts dating exclusively to the first Spanish period, suggesting that the moat was cleaned out shortly before the water battery was filled in. The base of the moat corresponds almost exactly to the 1940 moat base indicated by Manucy (1940). The 1940 base was 4 inches below the top of the lower course (toe) of the fort foundation, and the water battery old moat base was 4.5 inches below the top of the lower course (toe) of the fort foundation in the water battery (Manucy's investigation was in the south moat).

The layers in Figure 16 designated C, J, and N are of dark grey-brown soil and probably represent an earlier (19th century) ground surface. Thus the filled grade for the water battery was about 2.02 MMSL, or 30 cm. below present surface. Between this surface and the black moat muck is tan beach sand filled with shells. All material from these layers date post-1790, and all material above the suggested 19th grade dates to modern (post-plastic) times.

The scarp itself rests on two sterile layers of shell (coquina). The upper ledge is 25 cm. thick.

ward from the scarp 30 cm. (Feature 9). This rests on a second ledge, 35 to 40 cm. thick; which extends eastward from the scarp for 45 cm. These foundation toes rest on yellow-tan sterile sand, and apparently function as an absorbent cushion on which the fort rests in a "floating" fashion. This foundation information is completely consistent with that found by Manucy in 1940.

Figures 18 and 19 show the base of the shot furnace. At 2.09 MMSL (31 cm. below present surface) a coquina toe was uncovered at the southwest corner of the furnace. This was 20 cm. thick, and extended out from the furnace vertical wall for 10 cm. Adjacent to the solid toe was a deteriorated mass of coquina which was quite likely at one time a part of the toe. It was of the same thickness, and extended an additional 30 cm. out from the solid portion of the toe. Underlying both the solid and deteriorated portions of the toe is a thin footing of packed oyster shells, 10 cm. thick. This rests on the tan fill zone also encountered in Trench 1. The shot furnace was not excavated deeper than the shell footing. Directly above the coquina toe (Feature 13) in Zone 2, Level 2, a 1907 penny was found, indicating that the level was disturbed and filled subsequent to that date.



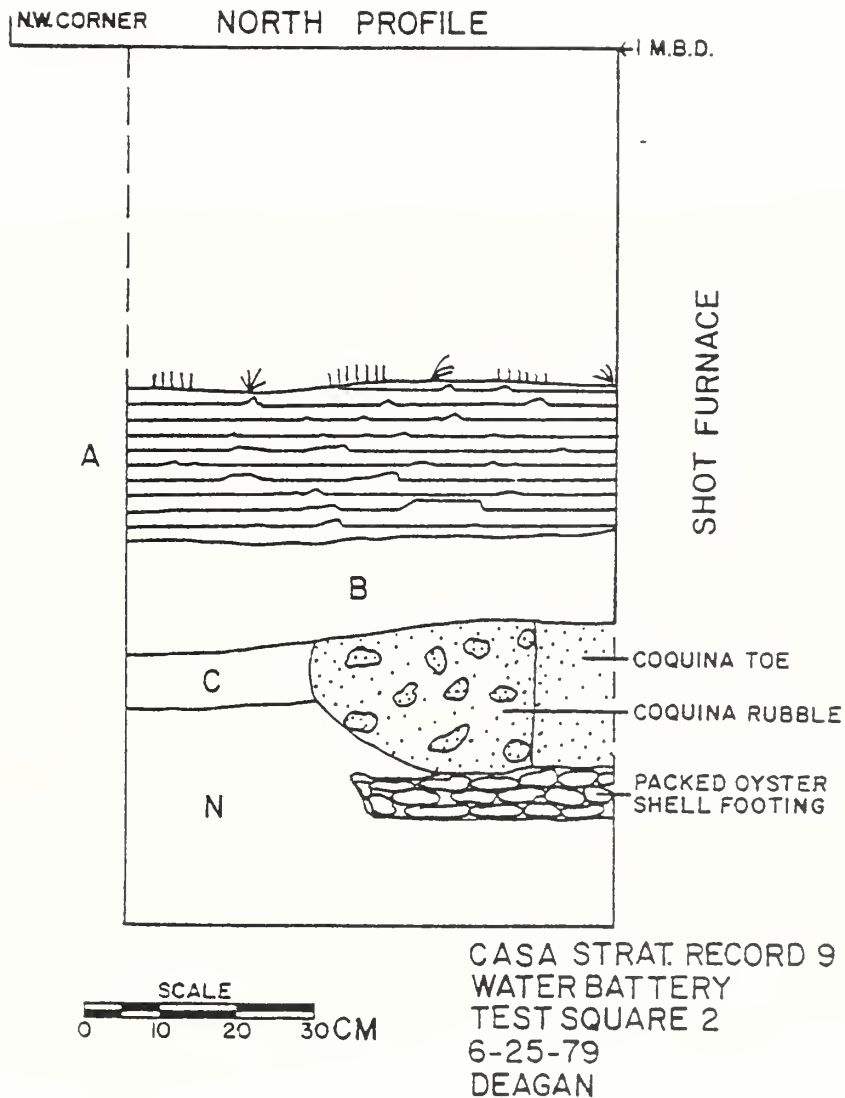


FIGURE 18

Water Battery, Test Square 2  
North Profile (Shot Furnace Base)

## KEY TO SOIL PROFILES

- |  |                                     |
|--|-------------------------------------|
| A- modern duff & humus                   | M- mottled yellow brown sand        |
| B- grey-brown sand w/ shell flecking     | W- w/ shell flecking                |
| C- red. brown sand w/ shell flecking     | X- tan sand with crushed shell      |
| D- dark brown sand w/ shell flecking     | O- oyster shell footing             |
| E- light brown sand w/ shell flecking    | P- tacey floor                      |
| F- red. brown sand w/ whole shell        | Q- loose concentrated coquina       |
| G- red. brown sand                       | R- burnt soil, shell charcoal       |
| H- light brown sand                      | S- concrete floor                   |
| I- tan sand                              | T- black hidden soil w/ whole shell |
| J- dark grey-brown sand                  | U- dark brown soil w/ whole shell   |
| K- cold sterile sand                     | V- dark brown, cold soil w/ shells  |
| L- mottled yellow, gold, brown, tan sand |                                     |

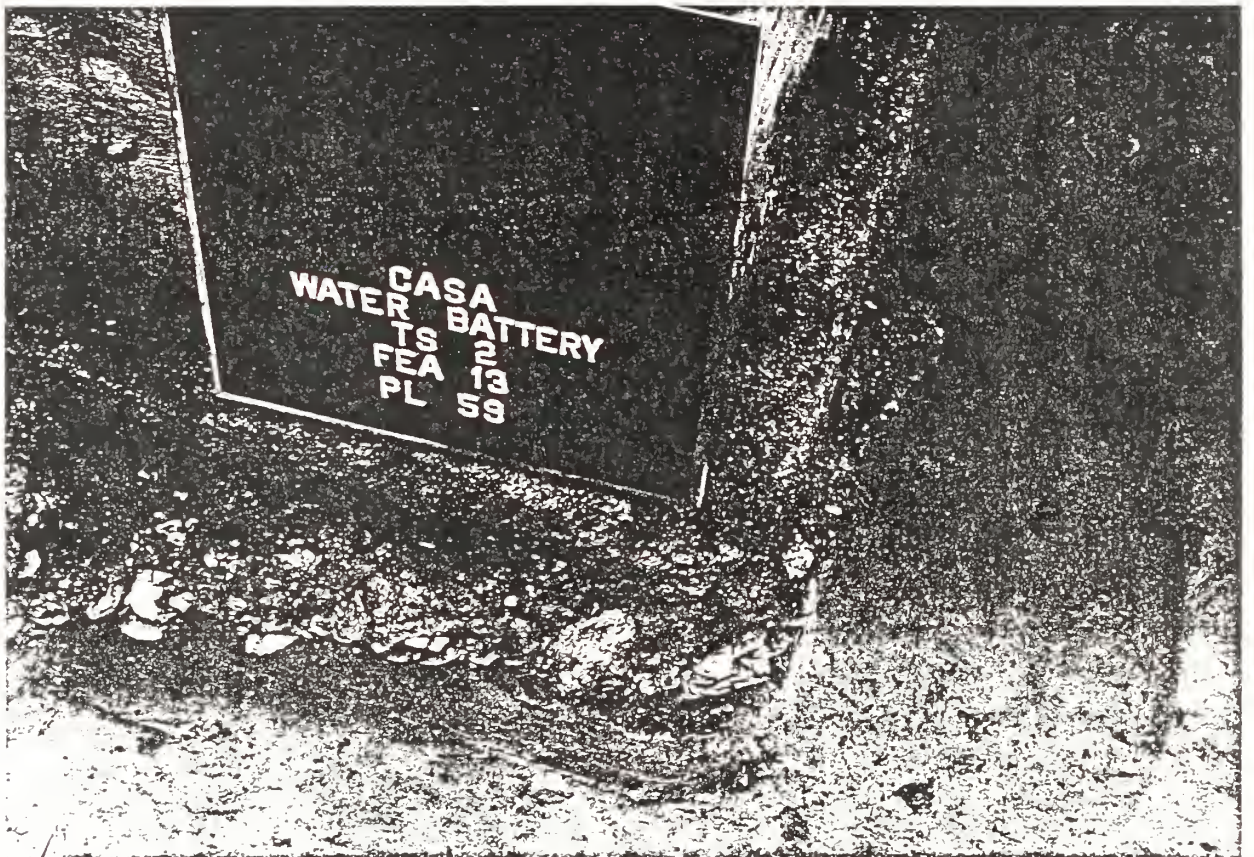


FIGURE 19

Shot furnace Sub-grade foundation

Table 15. Water Battery Provenience Guide  
(All elevations in meters above mean sea level)

Trench 1, Section A (against scarp)

FS#	Provenience	Top	Base	TPQ	Cultural Association
112	Zone 2	2.18	2.02	Ginger beer bottle	modern humic accumulation
114	Zone 3	2.02	1.99	minie ball	moat fill-19th century
none	Zone 4	1.99	1.90	-	moat fill-19th century
120	Zone 5, Level 1	1.90	1.59	olive jar	moat fill-19th century
123	Zone 5, Level 2	1.59	1.41	transfer-printed pearlware	moat fill-19th century
125	Zone 6, Level 1	1.41	1.35	creamware	old moat surface
126	Zone 6, Level 2	1.35	1.18	iron flake	old moat surface
133	Zone 6, Level 3	1.18	1.13	UID polychrome majolica	old moat surface
none	Zone 7	1.13		-	pre-Castillo
109	Area 1	2.20	2.09	St. Johns	modern disturbance
111	Pit 2	2.20	2.03	polychrome pearlware	modern disturbance
113	Feature 7	2.20	2.04	red brick	modern disturbance
119	Area 3	2.00	1.64	American military button	moat fill
none	Area 5	2.04	2.02	-	moat fill
127	Feature 8	1.98	1.64	percussion cap	moat fill
122	Feature 9	1.60	1.31	ginger beer bottle	moat fill
121	Area 7	1.75	1.61	iron oxide	moat fill
N/A	Area 8	1.59	1.48	-	-
N/A	Area 9	1.57	1.52	-	-
N/A	Feature 10	1.31	.98	-	-

Test Square 2 (shot furnace)

none	Zone 1	2.40	2.12	plastic	modern deposit
155	Zone 2, Level 1	2.10	2.02	transfer printed pearlware	modern deposit
156	Zone 2, Level 2	2.02	2.01	1907 penny	modern deposit
162	Zone 3	2.01	1.97	brown glass	moat fill-19th century
160	Zone 4	1.82	1.65	no cultural material	moat fill-19th century

Table 15, cont'd. Water Battery Provenience Guide

FS#	Provenience	Top	Base	TPQ	Cultural Associati
153	Area 1	2.11	2.06	Aluminum foil	modern distur bance
154	Area 2	2.07	1.83	brown beer bottle	modern disturbance
none	Feature 12	2.25	2.08	-	modern disturbance
161	Feature 13	2.09	1.77	St. Johns	modern disturbance

Table 16. Water Battery, Trench 1, Section A Artifacts  
(+-indicates presence)

Artifact-Description	Area 1 FS 109	Pit 2 FS 111	Zone 2 FS 112 *	Feature 7 FS 113	Zone 3 FS 114	Feature FS 118
<u>CERAMICS</u>						
<u>Hispanic</u>						
Puebla Polychrome						
UID Polychrome						
Olive Jar, unglazed			1 .046			1 .
Reyware			1 .046			
TOTAL	-	-	2 .091	-	-	1 .
<u>Other European</u>						
Slipware						
Creamware			1 .046			
Plain Pearlware			4 .182			
Polychrome Painted Pearlware		1 .111				
Transfer-Printed Pearlware			1 .046			
Ginger Beer Bottle			1 .046			
Unglazed coarse earthenware		1 .111				
TOTAL	-	2 .222	7 .318	-	-	-
<u>Aboriginal</u>						
St. Johns Plain	1 1.000					
San Marcos Plain		2 .222	1 .046			1 .
San Marcos Stamped		5 .556	1 .046			
UID sand-tempered						2 .
Leon-Jefferson						
Discards			11 .500			
TOTAL	1 1.000	7 .778	13 .591	-	-	3 .
TOTAL CERAMICS	1 1.000	9 1.000	22 1.004	-	-	4 1.
<u>NON-CERAMIC MATERIAL</u>						
<u>CULTURE</u>						
<u>Iron</u>						
whole nails		15 .	11	12	19	
nail fragments		22	59	6		4



Table 16, cont'd. Water Battery, Trench 1, Section A Artifacts  
(+-indicates presence)

Artifact Description	Zone 5 Level 1 FS 120	Area 7 FS 121	Feat. 9 Level 1 FS 122*	Zone 5 Level 2 FS 123	Zone 6 Level 1 FS 125	Zone Level FS 1
<u>CERAMICS</u>						
<u>Hispanic</u>						
Puebla Polychrome					1 .010	
UID Polychrome						1 .
Olive Jar, unglazed	1 .500				6 .059	
Reyware						
TOTAL	1 .500	-	-	-	7 .069	1 .
<u>Other European</u>						
Slipware					1 .010	
Creamware					1 .010	
Plain Pearlware						
Polychrome Painted Pearlware						
Transfer-Printed Pearlware			2 .222	3 1.000		
Ginger Beer Bottle						
TOTAL	-	-	2 .222	3 1.000	2 .020	
<u>Aboriginal</u>						
St. Johns Plain					2 .020	
San Marcos Plain					7 .069	2 .
San Marcos Stamped					38 .373	
UID sand-tempered			7 .778		2 .020	
Leon-Jefferson					7 .069	
Discards	1 .500	1 1.000			37 .362	8 .
TOTAL	1 .500	1 1.000	7 .778	-	93 .912	10 .
TOTAL CERAMICS	2 1.000	1 1.000	9 1.000	3 1.000	102 1.002	11 1.0
<u>NON-CERAMIC MATERIAL CULTURE</u>						
<u>Iron</u>						
whole nails						
nail fragments						



109  
Table 16, cont'd.

Artifact Description	FS 109	FS 111	FS 112*	FS 113	FS 114	FS 115
spike fragments		1	2			
Washer					1	
Slag		+	+		+	
fragments		+	+	+	+	
flakes	+	+	+			+
lumps	+	+	+	+		
<u>glass</u>						
green glass		13	2	1	12	3
olive green glass		4	39			
melted green glass		1				
clear glass		12	57	19	27	1
flat clear glass		9				
brown glass		1	1		3	
amber glass			1	1		
red glass				1		
<u>steel</u>						
thumb tack			1			
pin						
<u>brass</u>						
pin, straight				1		
comb						
washer			1			
cannon fuse					1	
percussion caps					9	
fragments			+			
<u>lead</u>						
minie ball			1		1	
shot		1	1			
pencil lead			1			
<u>copper</u>						
pin		1	1			
<u>buttons</u>						
brass button					1	
military button					1	

Table 16, cont'd.

Artifact Description	FS 120	FS 121	FS 122 <sup>e</sup>	FS 123	FS 125	FS 1
spike fragment					1	
washer						
slag				+		+
fragments						
flakes	+	+			+	+
lumps					+	
<u>Glass</u>						
green glass				2	4	
olive green glass						
melted green glass						
clear glass				2		
flat clear glass			2		1	
brown glass						
amber glass						
red glass						
<u>Steel</u>						
thumb tack						
pin						
<u>Brass</u>						
straight pin						
comb			2	15		
washer						
cannon fuse						
percussion cap						
fragments						
<u>Lead</u>						
minie ball						
shot						
pencil lead						
<u>Copper</u>						
pin						
<u>Buttons</u>						
brass button						
military button						

Table 16, cont'd.

Artifact Description	FS 109	FS 111	FS 112	FS 113	FS 114	FS 115
shell button		1				
<u>Pipes</u>						
Kaolin clay stem						
Aboriginal bowl					1	
Tin foil fragment		1	2			
Flint spall						
Soapstone			1			
Quartz fragment		+				
Granite						+
<u>Construction material</u>						
coquina		+	+	+	+	+
tabby			+		+	+
mortar	+		+	+		+
plaster						
brick		+	+	+	+	+
concrete		+	+		+	
Burned clay			+			
Slate						
Charcoal		+				
Coal	+					

112  
Table 16, cont'd.

Artifact Description	FS 120	FS 121	FS 122*	FS 123	FS 125	FS 1
shell button						
<u>Pipes</u>						
Kaolin clay stem						
Aboriginal bowl						
Tin foil fragment						
Flint spall					1	
Soapstone						
Quartz fragment						
Granite						
<u>Construction Material</u>						
coquina			+	+	+	
tabby						
mortar			+	+	+	+
plaster						
brick				+	+	+
concrete						
burned clay						
slate				+		
Charcoal						+
Coal					+	

Table 17. Water Battery, Test Square 2 Artifacts  
(+/- indicates presence)

Artifact Description	Area 1 FS 153	Area 2 FS 154	Zone 2 Level 1 FS 155	Zone 2 Level 2 FS 156	Feature 13 FS 161	Zone 3 Level sw 4 FS 162
<u>CERAMICS</u>						
<u>Hispanic</u>						
San Luis Polychrome			1 .111			
Olive Jar, unglazed		1 .500				
TOTAL	-	1 .500	1 .111	-	-	-
<u>Other European</u>						
Polychrome painted creamware			1 .111			
Plain Pearlware				1 1.000		
Transfer-printed pearlware			1 .111			
Early polychrome painted pearlware			1 .111			
UID Burned Refined earthenware			1 .111			
Slipware			1 .111			
TOTAL	-	-	5 .556	1 1.000	-	-
<u>ABORIGINAL</u>						
St. Johns stamped					1 .500	
St. Johns stamped, sooted					1 .500	
San Marcos stamped			2 .222			2
UID sherd-tempered		1 .500				
Abo discards			1 .111			3
TOTAL	-	1 .500	3 .333	-	2 1.000	5 1.
TOTAL CERAMICS	0	2 1.000	9 .999	1 1.000	2 1.000	5 1.
<u>NON-CERAMIC MATERIAL CULTURE</u>						
<u>Glass</u>						
Green glass	1		14	45		7
Emerald green glass		24	10	4		
Clear glass	32	34	48	88		4
Brown glass		4		1		3
Aqua glass		2				

Table 17, cont'd.

Artifact Description	FS 153	FS 154	FS 155	FS 156	FS 161	FS 162
Amber glass				1		
<u>Iron</u>						
whole nails			7	3		
nail fragments		3	29			3
iron slag	+			+		
iron lumps		+	+	+		
iron fragments	+			+		
iron flakes		+	+	+		+
<u>Lead</u>						
Pencil lead			1			
Bullet				1		
<u>Brass</u>						
Grommet		1	1			
Eye fastener			1			
brass fragments			+			
<u>Copper</u>						
1907 penny				1		
copper fragments		+				
<u>Buttons</u>						
Molded glass			1			
Iron			1			
Porcelain			1			
Brass military			1			
Bone				1		
Blue Faceted Cane Bead		1				
Clay marble				1		
Tin Foil	1					
Granite						+
Rock fragment		+	+			
<u>Building Rubble</u>						
Coquina	+			+	+	
Tabby					+	+



Table 17, cont'd.

Artifact Description	FS 153	FS 154	FS 155	FS 156	FS 161	FS 16
Brick	+	+	+	+	+	+
Mortar			+			
Plaster	+	+				
Slate	+	+	+			
Pumice				+		

### Interior Excavations

High priority areas for archeological investigation on the Fort interior included the Seminole Room (# 4); the Latrines; Room 21 (the Gunner's room) and Room 14. Excavations in all cases were to determine conditions of sub-grade foundations; to understand more clearly the past functions and uses of these areas; and to locate the position of the pre-1756 walls.

Tests were carried out in the Latrines and in the Seminole Room. Rooms 14 and 21 were not investigated because these rooms were discovered, prior to excavation, to contain some of the few colonial tabby floors remaining in the Castillo. In addition, the unexpectedly deep and complex deposits in the Latrines and Seminole Room claimed an unexpectedly large portion of field time.

Previous archeological excavations in the Castillo interior included Manucy's work in the guardroom and Sally Port areas (1960), delineating floor sequences and architectural details in those areas. In 1956, Harrington, Manucy and Griffin published the results of the 1953 excavations in the courtyard itself. These revealed the presence of a pre-Castillo aboriginal component; the grade elevations of earlier fort occupations; and the arc of structures that were present in that area between 1675 and the 1730s.

By 1675, the north, south and east walls of the Castillo were completed, and the row of buildings documented by Harrington et al (1956) were present in the courtyard. The west side of the fortress was open, although a 12-foot high earthwork faced with stone was constructed on that side (Arana and Manucy:27) with a moat 14 feet wide and 10 feet deep. By 1684, the west rooms and curtain were

complete. In 1738, however, the Castillo interior underwent a major change, due to the need for repairs and for better defensive structures. The rooms around the four curtains were enlarged, and expanded toward the center of the courtyard. At the same time, the rooms were vaulted and the gundeck raised. By the 1750s the floorplan was similar to that seen today at the Castillo (Appendix 1, Map 3).

The 1763 Castillo map (Appendix 1, Map 3), shows the configuration of the Castillo at the end of the first Spanish period. The 1785 Rocque map, drawn to assess the Fort's condition, configuration and needed repairs at the end of the British period (Luis Arana, personal communication, 1980) shows the changes that took place during that occupation; most notably in the privies (Appendix 1, Map 5).

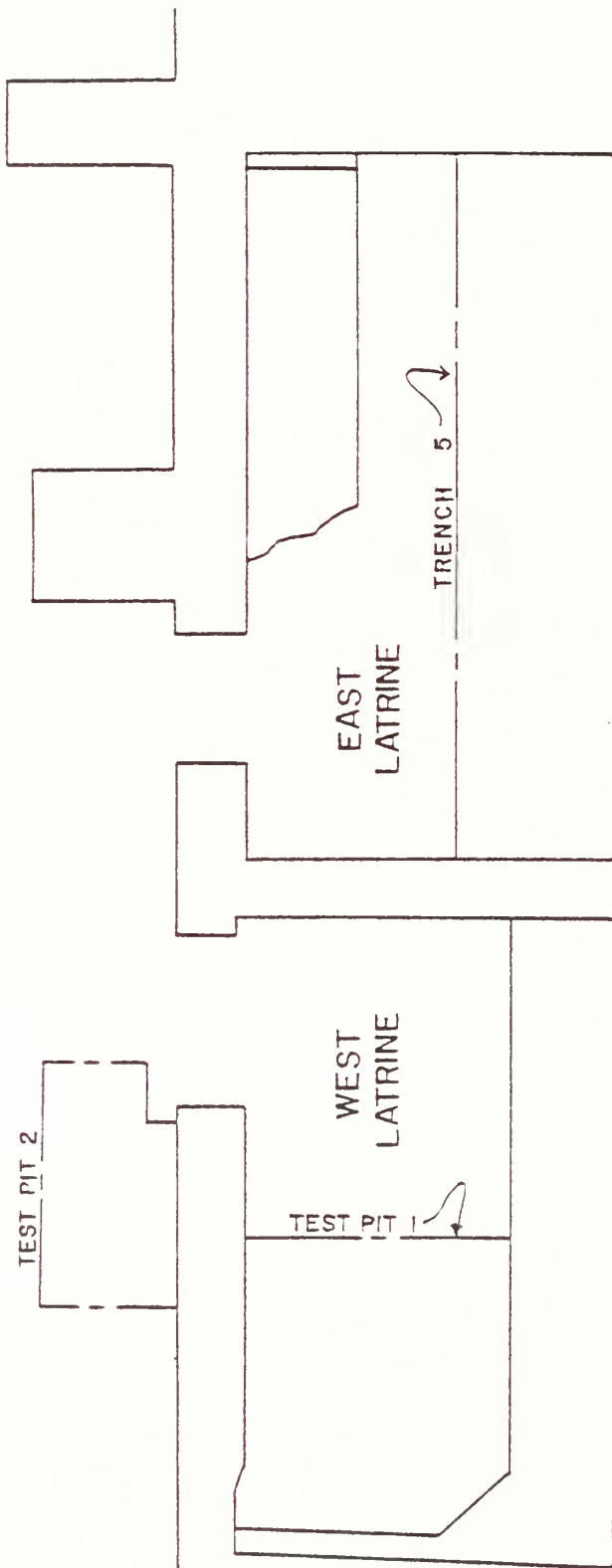
It is quite likely that other repairs and renovations took place within the Castillo during the second Spanish period, although the documentation for these is not available at this time. From 1821-1933, the war department years, several repair and renovation projects took place throughout the Fort, including, among others; construction of new privies; repair to the ramp (1885), and terreplein reconstruction (1866) (Luis Arana, personal communication, 1980). Much of this work is physically marked by a fine aggregate, dark-grey cement-like mortar (ibid.).

Specific information about the areas excavated in 1979 will be discussed below, with the sections on each room excavated.

### The Latrines

The two small rooms beneath the ramp on the courtyard's south

C O U R T



CASA COMPOSITE

LATRINES

7-12-79

DEAGAN

SCALE 1:50



FIGURE 20  
Locations of Test Units  
in Latrines

side have been latrines or "necessarias" since the major renovation of the 1750s. The ramp itself was constructed after 1680 and was expanded during the 1750s renovation (Arana and Manucy 1977: 30;45). Arrendondo's map of 1737 (Appendix 1, Map 2), shows two room divisions beneath the ramp; and a privy in what is now the visitors' restroom. On Castello's 1763 map, however, (Appendix 1, Map 3); the area beneath the ramp is shown as two separate rooms; with three privy holes flush against the south wall of each room.

By the time the 1785 map of Mariano de la Roque was drawn (Appendix 1, Map 5); the privies are shown in their present position, but with the six holes gone, and instead; two squarish-structures near the center of each room. In addition, a drainpipe for the privies is shown apparently going under the east curtain, and emerging into what is now the water battery at a point exactly opposite the latrines themselves. These represent changes made during the British occupation (see above).

Excavations were carried out in the latrines for several purposes:

1. to provide information on the conditions of the sub-grade courtyard inner wall.
2. to provide information on the condition of the ramp sub-grade walls.
3. to gather interpretive data on sanitary engineering systems used by the Castillo's colonial inhabitants.

Three units were excavated to investigate these questions (Fig. 20). The west latrine contained a raised, 1 m. high coquina rock ledge extending the length of the south wall, .80 m. in width

The east latrine did not have such a ledge. Both rooms have a modern floor of crushed coquina and sand, placed there in 1963 (Luis Arana, personal communication, 1980).

The east latrine excavation unit was a trench extending across the room from east to west; 4.5 m. by 6 m.; adjacent to the south wall of the latrine. Since the roof of the latrines (at the base of the ramp) sloped radically toward the west, accessibility to the west latrine was hindered (the west end was only 28 to 31 cm. high from floor to ceiling). Thus a 1.8 by 1.6 meter test pit was placed encompassing the entire western 1.8 meters of the latrine. Access to the unit could then be gained through the eastern portion of the room, where the doorway was located. The top of the ground slopes toward the east, with a 16 cm. difference between the east and west ends of the room. In addition to the units inside the latrines, a unit (TF 2) was placed outside the west latrine in the position shown in Figure 20. This was 1.5 meters east-west, .88 meters wide on the west end and .83 meters wide on the east

(due to the necessity of working around existing paving stones in the courtyard).

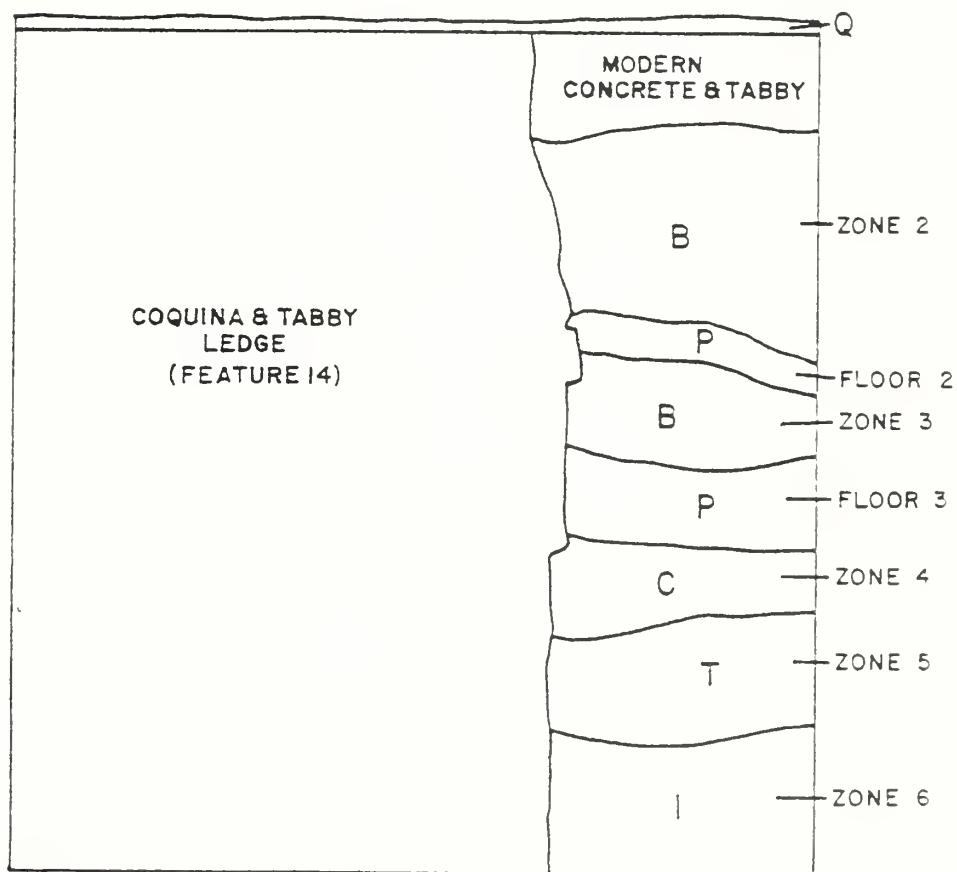
### The East Latrine

Excavation in the east latrine was complicated by the presence of a massive complex of PVC pipes, which contained most of the electrical and water lines serving the fort. This pipe complex was encountered at an average depth of 3.43 MMSL or 10 cm. below present surface. Since these pipes covered the entire eastern 3.5 meters of the unit; the excavation was restricted to the western one meter of Trench 5, below Zone 1.



TRENCH 5  
WEST PROFILE

1 M.B.D.



KEY TO SOIL PROFILES

- modern duff & nutus
- grey-brown sand w/ shell flecking
- med. brown sand w/ shell flecking
- dark brown sand w/ shell flecking
- light brown sand w/ shell flecking
- med. brown sand w/ whole shell
- med. brown sand
- light brown sand
- tan sand
- dark grey-brown sand
- solid sterile sand
- mottled yellow, red, brown, tan sand
- mottled yellow, brown sand w/ shell flecking
- tan sand with crushed shell
- oyster shell footing
- tater floor
- loose concentrated coquina
- burnt soil, shell charcoal
- concrete floor
- black midden soil w/ whole shell
- dark brown soil w/ whole shell
- dark brown, red soil w/ shells

SCALE  
0 10 20 30 CM

CASA  
EAST LATRINE  
STRAT. RECORD 10  
7-9-79  
DEAGAN

FIGURE 21

East Latrine, Trench 5  
West Profile

At 3.25 MMSL (west end) a coquina and plaster ledge (Feature 14) was encountered in the southwest corner of the trench. This was .70 m. wide, sloping toward the east slightly; and was apparently intruded into and removed by the pipe complex in that portion of the trench. This seems to be a continuation of the ledge present in the west latrine; which occurs in that room at 3.61 MMSL; and which is highly consistent with Feature 14 considering the eastward slope of the feature.

Figure 21 shows the west profile of Trench 5, which was located directly under the dividing wall between the two latrines. Two floor levels are present in the room, one at 2.96 MMSL (Floor 2) and one at 2.80 MMSL (Floor 3). Floor 2 overlies Zone 3, which contains transfer-printed pearlware and is a second Spanish period deposit. Floor 3 (2.80 MMSL) overlies Zone 4, which contains no artifacts more precisely dateable than St. Johns Series aboriginal ceramics. It is most likely, however; that Zone 4 represents the initial deposit preparing the latrine for its lowest floor. This is suggested by the fact that Zone 4 lies directly upon the aboriginal midden noted throughout the Fort (see above, South Covered Way section). Here it is located at 2.61 MMSL (in west latrine it was 16 cm. higher; in the South Covered Way it was at 2.80 MMSL). There are no floors predating Floor 3 in this unit.

Floor 2 is of tabby, averaging 7 cm. thickness and Floor 3 is also of deteriorating tabby, 10-12 cm. in thickness. The coquina ledge (Feature 14) presently is about 45 cm. above Floor 3. The most likely explanation for this ledge is that it contained the privy holes represented in the 1763 map when Floor 3 would have been in use. Results of the west latrine work suggest that the

upper 40 to 45 cm. of the ledge were added during the late British or second Spanish periods; which would place the ledge nearly level with Floor 3 during the first Spanish period. Unfortunately, reluctance to disturb historic fabric of the ledge precluded investigation of that interpretation.

#### The West Latrine - interior

This area contained a very complex depositional situation, and while it was undisturbed by pipe construction, it was badly decomposed and deteriorated and subject to a great deal of cultural activity. The activity sequence was the same as that revealed in the east latrine; however more information on features was present. Considerable construction and repair activity took place here, accounting for the large number of zones and areas listed in Table 18. As soil horizons in the unit changed in consistency and color, they were given new zone designations and excavated separately. In some cases these zones were only a few centimeters thick. Additionally, every discretely bounded soil discoloration within a zone was given an "Area" designation and excavated separately. Many of these, after excavation, were revealed as the result of inadvertent depositional processes (i.e., a coquina block partially deteriorating before removal), and are often combined with one another in this discussion of the sequence of activities in the west latrine.

Figures 22-24 show the east, north and south elevation-profiles of Test Pit 1 in the west latrine. Two floors and two "surfaces" were present in the units (The surfaces were irregular, deteriorated areas of compressed tabby, coquina and lime, which were present only in portions of the unit).

# TEST PIT 1 - SOUTH PROFILE

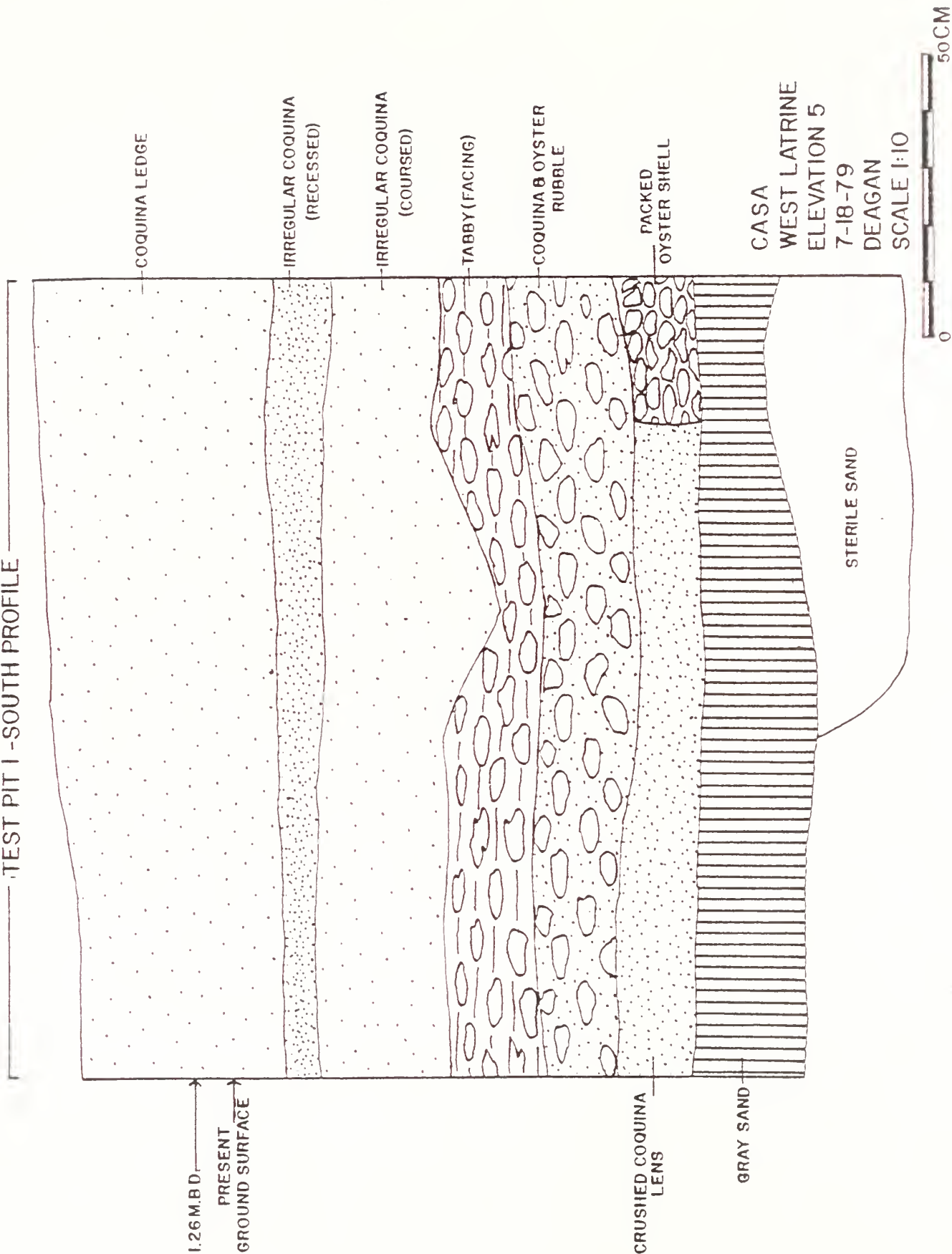
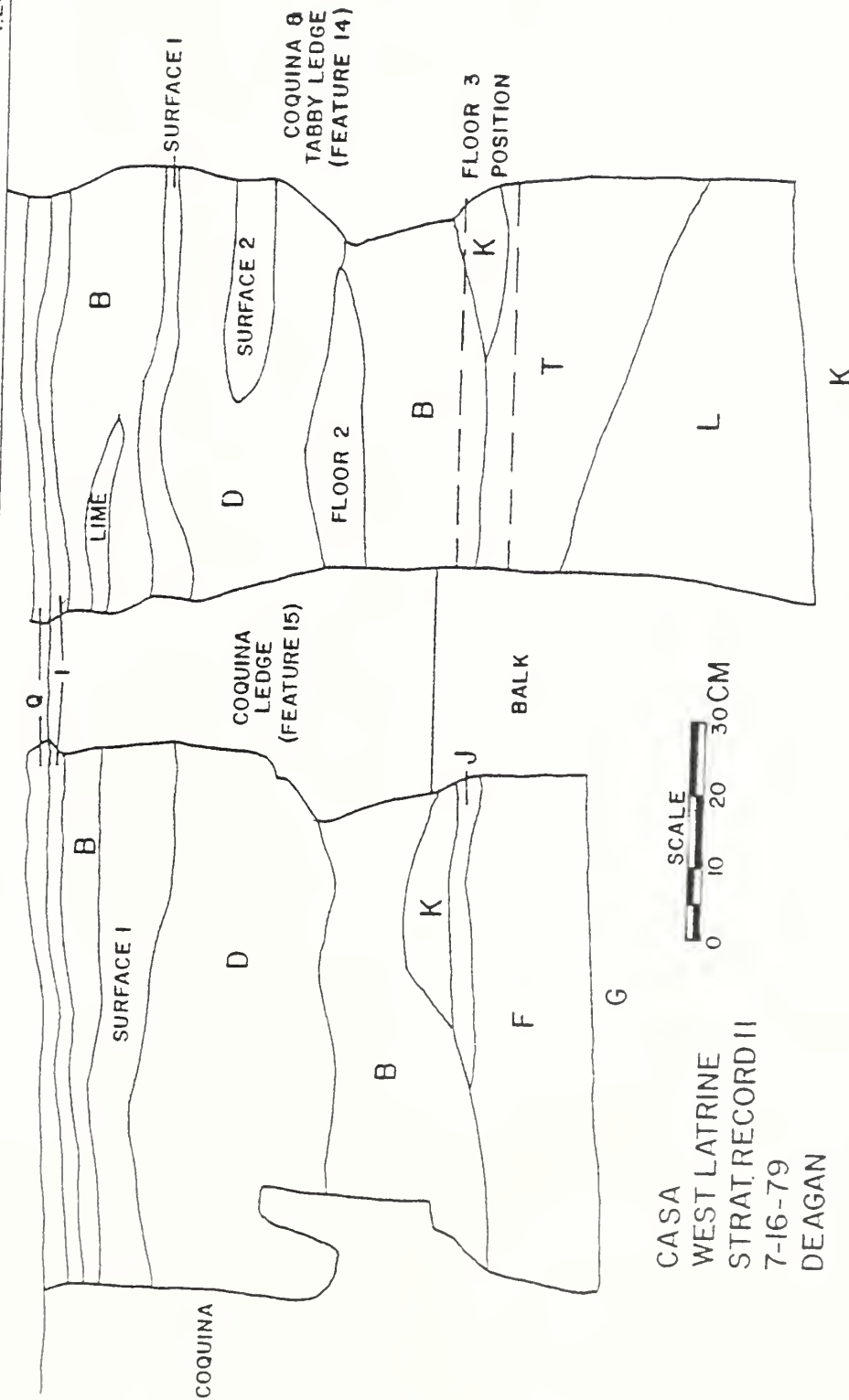


FIGURE 22

West latrine, Test Pit 1  
South profile

# TEST PIT I EAST PROFILE

1.26MBD



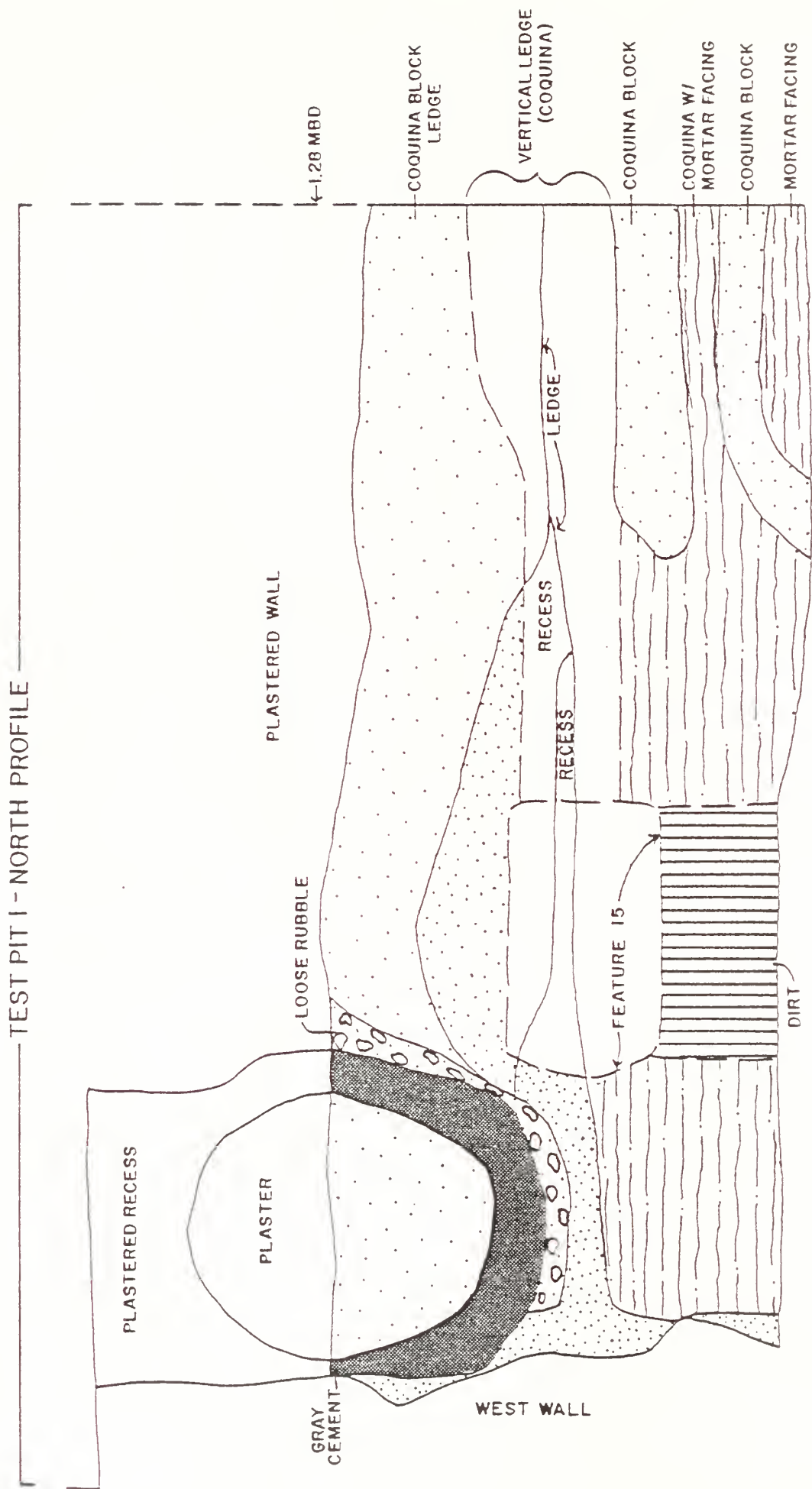
CASA  
WEST LATRINE  
STRAT. RECORD II  
7-16-79  
DEAGAN

## KEY TO SOIL PROFILES

- A- modern duff & humus
- B- gray-brown sand w/ shell flecking
- C- med. brown sand w/ shell flecking
- D- dark brown sand w/ shell flecking
- E- light brown sand w/ shell flecking
- F- med. brown sand w/ whole shell
- G- med. brown sand
- H- light brown sand
- I- tan sand
- J- dark grey-brown sand
- K- cold sterile sand
- L- mottled yellow, old, brown, tan sand
- M- mottled yellow, brown sand w/ shell flecking
- N- tan sand with crushed shell
- O- oyster shell footing
- P- tatoy floor
- Q- loose concentrated coquina
- R- burnt soil, shell charcoal
- S- concrete floor
- T- black midden soil w/ whole shell
- U- dark brown soil w/ whole shell
- V- dark brown, cold soil w/ shells

FIGURE 23.

West Latrine, Test Pit I  
East Profile



CASA  
WEST LATRINE  
ELEVATION 6  
7-18-79  
DEAGAN  
SCALE 1:10

FIGURE 24  
West Latrine, Test Pit 1  
North Profile (North Wall  
Elevation)



Floors 2 and 3 coorespond almost exactly to the elevations of those floors in the east latrine. Floor 3 was partially removed by the construction of Feature 15, and thus does not appear in the east profile (Fig. 23) since it remained only in the west end of the unit.

Floor 3 lies directly above the aboriginal midden layer discussed above; and represented by layer "T" in Figure 23 (this was encountered only outside of Feature 15). The aboriginal component was excavated as Zones 7-9. The floor (also appearing in other parts of the unit as Zone 6, is almost certainly the earliest floor in the room. At the place in time represented by Floor 3 (minimally 1750-1763); the coquina banquette or ledge on the south side of the latrine (Feature 14, Figs. 25, 27) most likely contained the three privy holes represented on the 1763 map. Figure 25, showing the south face of the ledge, suggests that it may have been made in at least two phases.

At 3.26 MMSL (ca. 40 cm. below the ledge top, and 15 cm. above Floor 3) a recess, 8-10 cm. wide, filled with irregular chunks of coquina, is present. Above that level a solid slab of coquina, partially faced with mortar and plaster, constitutes the upper stage of Feature 14. Below the recess, the feature is comprised of irregularly coursed coquina masonry, extending 35 cm. to rest on a packed footing of coquina chunks and oyster shell (Fig. 22).

It is suggested that the recess at 3.26 MMSL represents the original top of Feature 14, and the original location of the privy holes shown in the 1763 map. These would have been three holes in a coquina block ledge or banquette, raised 10-15 cm.

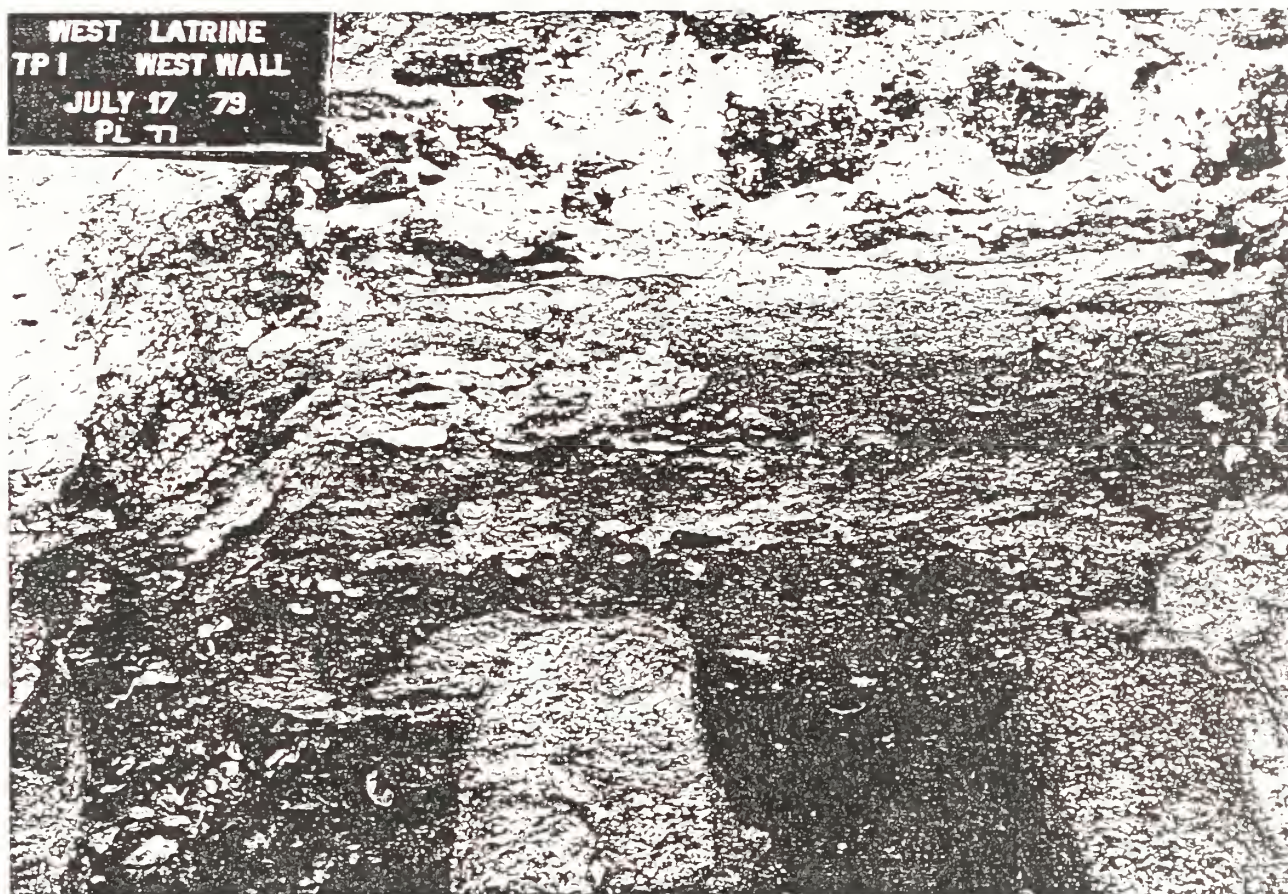


FIGURE 25

West latrine, Test Pit 1, West Elevation

above Floor 3. Support for this interpretation is provided by the following data:

1. The present top of Feature 14 is a solid slab of coquina, with no evidence of previous openings in the top. No seams or breaks are apparent.
2. If the 3.26 MMSL recess was the level of the original privy holes; these holes would have been about 10 cm. above Floor 3, which is a useable height for a privy hole. If, however, the present top of Feature 14 is the original top, it would have been (at the west end) some 60 cm. (2.27') above the floor. Considering particularly that the privy holes were not flush with the room side of the bonquette (Feature 14), 2.27 feet would have been a difficult and inconvenient height for a privy hole (FSU field school members, personal communication, St. Augustine, 1980).
3. Although Floor 2 (second Spanish period) slopes downward from west to east, Floor 3 (first Spanish period) does not. The present top of Feature 14 also slopes downward from west to east; while the recess in Feature 14 does not. This also tends to support the presumed association between Floor 3 and the recess at 3.26 MMSL as the top of the privy holes.

Taken together, these data most strongly indicate that the privy holes shown on the 1763 map were at the recess in Feature 14, and associated with Floor 3.

The next construction phase in the latrine is represented by Zones 4 and 5 (lower "B" layer in Fig. 23), Feature 15 and Floor 2. Feature 15 is the rectangular, trough-like coquina structure shown in Figures 26 and 27. The base of the Feature's





FIGURE 26

West Latrine: Feature 15

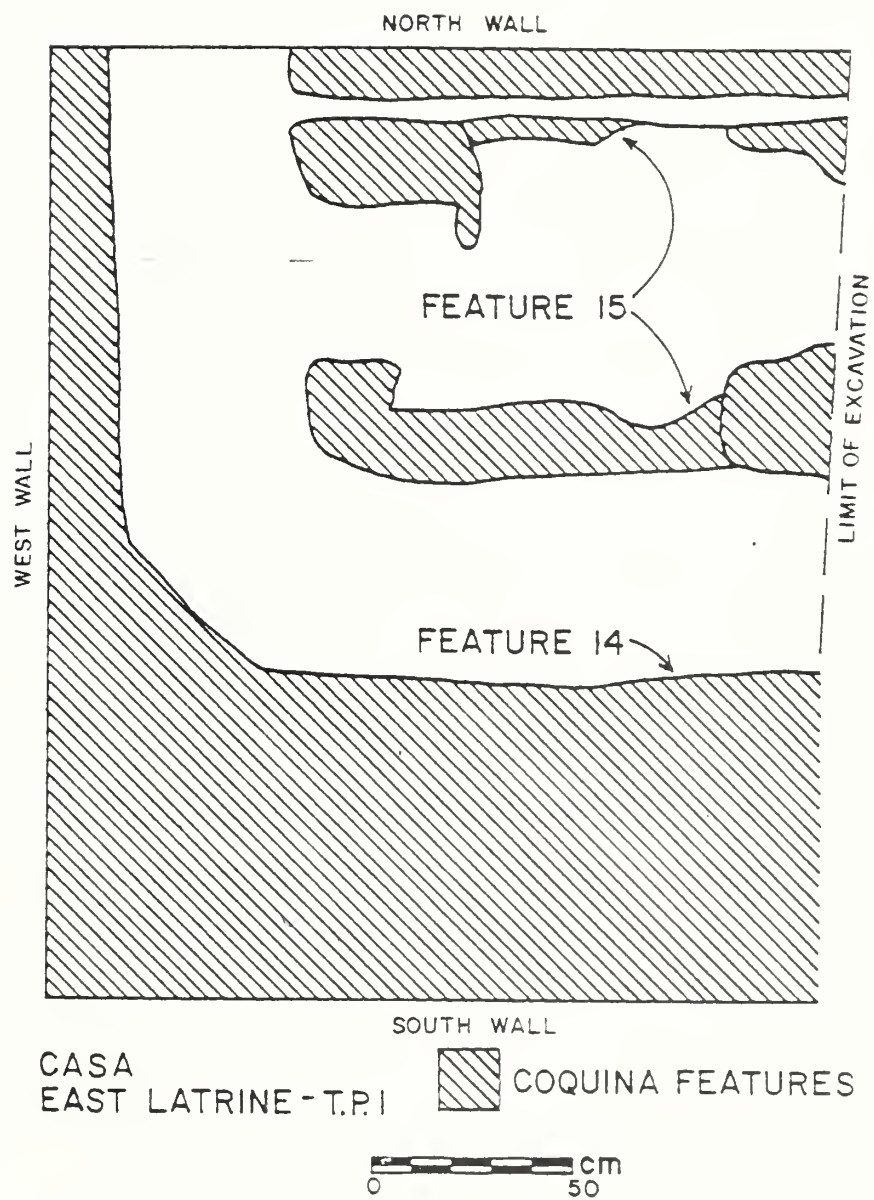


FIGURE 27

West Latrine, Test Pit 1  
Plan of Feature 15 (Privy)  
and Feature 14 (Ledge)

south wall is at 2.81 MMSL; some 3-4 cm. above Floor 3. The lower 15 cm. of Feature 15's walls are approximately 40 cm. thick, while above the 15 cm. level they are some 20 cm. thick. Figure 23 reveals that two other phenomena occur at that same level; the top of Zones 4-5 (lower layer "B") and, on the outside of the feature, Floor 2 occurs at that level. It seems most likely, therefore, that the Floor 2 level (corresponding to the change in thickness of the Feature 15 walls and the top of layer "B") was the level at which this second activity phase took place.

Feature 15 was most probably a trough-type urinal in the center of the latrine, replacing the privy holes in the previous phase associated with Floor 3. This urinal feature may be that squarish structure shown in the 1785 Roque map (which showed one such structure in each side of the Privy).

The lower 15 cm. of the Feature's walls were sub-grade at that time; suggested both by the fact that the coquina blocks comprising it were simply placed on soil with no footing, and by the discontinuities occurring 15 cm. above Feature 15's base, that are discussed above. Floor 2 was probably the grade elevation at that time (ca. 3.03 MMSL). This floor sloped toward the east, 13 cm. from the west to the east end of Test Pit 1. It did not occur inside Feature 15. No flooring material was evident within Feature 15.

The feature itself abbutted the north wall of the latrine, and ended .45-.65 m. east of the room's west wall. Reference to Figure 24 [the north profile of Test Pit 1 (the room's north wall)]



reveals the confusing situation of superimposed coquina ledges, construction and repairs at that level. It also reveals, however, an interesting repair feature which illuminates the function of Feature 15. At the west end of the profile, a circular hole which was subsequently refilled can be seen. The original hole extended from 3.59-3.09 MMSL, and was .40 m. wide. The base of the hole would have been just a few centimeters above Floor 2 (which was crumbled and extremely deteriorated in the portion of the unit adjacent to the north wall).

This hole is suggested to have been present in the latrine wall at the time when Floor 2 and Feature 15 were in use. It may have functioned as an opening through which water from the courtyard well could have been slushed in order to rinse out the urinal trough into a hole connected with the drain shown on Roque's 1785 map and discussed above. The eastward slope of the room at that level, the relative elevations of the base of the hole and of Floor 2, and the depiction of just such a trough and drain system on the 1785 map all support this interpretation. The only major interpretive difficulty is the absence of evidence for a prepared floor inside Feature 15. The extremely deteriorated and disturbed nature of all the deposits may have obscured such evidence; or cleaning out of the urinal trough prior to filling it in may have removed such evidence. It is also possible that no prepared floor was present inside the feature, since it is from that area that the only coprolites found at the Castillo were recovered.

The precise dating of Feature 15, Floor 2 and the hole in the north wall are somewhat more difficult than the suggestion of their functions. Floor 2 overlies Zones 4 and 5 (lower layer "B"

in Figure 23), which contained no diagnostically dateable items other than a single sherd of shell edged pearlware in Zone 4 (see Table 20). Thus the TPQ for Floor 2 and its associated feature 15 is 1785 (the same year that the square structures appear in the privy on the Roque map). It must be noted, however, that Floor 2 was broken in places, and did not "seal" the lower "B" (Zones 4-5) deposit. It is possible, therefore, that the single shell edged sherd could have been deposited through one of the many disturbances that apparently took place in the area through its history, particularly since the floor and feature were almost certainly British period features.

However, if the interpretation of the privy holes and Floor 3 given above is valid, the Floor 2 and the associated Feature 15 must date to after 1763 (when the privy holes still appear on the map). Thus at some time after 1763, the layer of earth constituting Zones 4-5 (lower layer "B", Fig. 23) was deposited, raising the floor level to that of Floor B and providing support for the lower 15 cm. of Feature 15's walls.

Overlying Floor 2, and presumably added to fill in the privy after its colonial usage, was Zone 3. This zone contains early hand painted pearlware, minieballs and a 5-hole bone button, and is capped by "Surface 1". The mini ball (post-1850 (Peterson 1964:219) and 5-hole button (similar to South's Type 19 from Brunswick Town dating 1837-1865))(in Noel Hume 1978:91) suggest that Zone 3 was deposited during the American period, after 1850. Zone 3 (Layer "D" on Fig. 23) was present both inside and outside of Feature 15.

Zone 3 was capped by Surface 1, a layer of very deteriorated mortar and tabby rubble, occurring both inside and outside of Feature 15 at 3.25 MMSL. The floor itself contained a minieball, indicating only its presence after 1850. It is possible also that Surface 1 represents a post-colonial use level in the privy. At the time Surface 1 was in use, Feature 15's walls were some 15 cm. high, above Surface 1, and Surface 1 was apparently poured around the Feature. Another piece of data suggesting that the privy may have been used in this fashion into the American period is the hole (discussed above) in the room's north wall. This hole, interpreted as the opening through which courtyard water was sloshed in order to clean out the privies, was either filled in, added to, or repaired during the period when the dark grey cement known to be associated with the War Department, was used. The most probable date for this work was during the 1885 ramp repair discussed above.

At the time of this cement work, the grade inside the west latrine was probably at about 3.35 MMSL (just at the base of the present loose coquina and sand flooring). That level is the highest elevation of the exposed grey cement. Above that point, the wall is carefully smoothed and plastered. This work appears to have been done following the use of Surface 1 (since the grey cement would have been exposed at that elevation). The top of the cement repair (3.35 MMSL) conforms closely to the top of the zone covering Surface 1 (Zone 2, Upper layer "B" in Fig. 23), which is at 3.36 MMSL. Thus it appears most likely that the hole was open while Surface 1 was in use (both inside and outside

of Feature 15); was filled in at some point after 1885; and then Zone 2 was added, bringing the latrine up to within 5 cm. of its present grade. Zone 2 itself does not provide a great deal of help in dating this event; however it does contain a S-88 rifle cartridge casing, dating the deposit of Zone 2 (and thus the cessation of Surface 2 and Feature 15's usage, as well as the filling in of the north wall hole) to some time after 1880 (Peterson 1964: 78-80). Zone 1 itself was the presently existing floor, established in 1963.

The period of Indian incarceration at the Castillo following the Seminole period gives further insight into the use and abandonment of the latrines. During the Plains Indians occupation (1875-1878) privies especially for the Indians were made in what is now Room 23 (the firewood room) (Luis Arana, personal communication 1980). This suggests that the latrines under investigation were in use for the soldiers at that time. Quite probably the newer Indian latrines were taken over by the Fort's soldiers after the final departure of the Indians in 1887, abandoning the privy under the ramp. This corresponds very closely to the post-1880 date for Zone 2 as the end of the ramp privy use.

### Latrine Summary

Due to the complicated and often confusing sequence of events in the latrines, and the resulting complicated archaeological by-products of those events, a summary of the interpretations documented above, is offered below. It must be noted, however, that these interpretations are based on only a small sample of the total system. In addition, the very important historical

documentation data was not available at this writing; and may alter these interpretations. Both latrines are included in the summary.

The earliest activity in the vicinity of the latrines was the aboriginal midden layer (Zone 7-9) noted in other areas of the Fort. During the 1730s-50s renovation, the latrines were established in their present location. This is represented archaeologically by Floor 3 (2.78 MMSL) in both latrines; and Feature 14, the coquina ledge on the south wall of the latrines. At this earliest phase, the ledge was probably about 45 cm. lower than it is today; and contained six privy holes (through both latrines) in a banquette of covered coquina blocks. This situation lasted until at least 1763.

After 1763, either during the British period, a 45 cm. plastered coquina slab was placed over the earlier privy holes, raising the banquette to its present height. The floor was raised (Zones 4-5) at this time, and a rectangular, urinal-like trough of coquina block was added (Feature 15). The floor at this period was Floor 2 (3.03 MMSL) in both rooms. Also at this time, a circular hole was cut into the north wall (at the west end) of the west latrine, probably to provide an opening through which water from the courtyard could be sloshed to rinse out the Feature 15 privy into the drain shown on the 1785 map. The base of the hole is just a few centimeters above the top of Floor 2.

A single sherd of shell edged pearlware (1780-1830) indicates a post-1780 deposition under Floor 2, while the appearance of Feature 15 on a 1785 map indicates a pre-1785 construction. The



lack of integrity in the deposits and the very disturbed nature of the area, however, suggests that a more reliable bracket would be 1764 (the year after the six hole privy appears on the Castello map) to 1784 (when the rectangular troughs appear on the Roque map). It seems most likely that the renovation of the privies took place during the British period. Final confirmation of this awaits the historical data section, British period.

This privy configuration was apparently used until well into the American period. At some point in time after 1850, the privy was cleaned out (removing the British/Spanish II Floor 2 inside Feature 15), a 20 cm. thick layer of earth was added both inside and outside the privy (Zone 3), and a tabby surface (since deteriorated), Surface 1, was poured, both inside and outside Feature 15. At that time, Feature 15 stood some 15 cm. above Surface 1, and may have still been used during this time as a privy.

After 1880, Surface 1 and Feature 15 were covered by Zone 2 and Zone 1. The wall between the privies was added, and the privies assumed their present configuration. This is believed to have occurred ca. 1887, when the Plains Indians left the Castillo and the privy in Room 23 became available for soldiers' use.



Table 18. Latrine Provenience Guide

Datum: 4.67 MMSL (All elevations in meters above mean sea level)

East Latrine - Trench 5

FS#	Provenience	Top	Base	TPC	Cultural Association
none	Zone 1	3.36	3.34	(modern)	Modern
none	Zone 2, Level 1	3.34	3.25	(disturbed)	Pipe-disturbed
none	Zone 2, Level 2	3.25	3.05	( " )	Pipe-disturbed
165	Zone 2, Level 3	3.05	2.96	brown glass	19th century - post-colonial
168	Zone 3, Level 1	2.84	2.62	transfer print pearlware (dist.)	- late British
182	Zone 4	2.62	2.61	St. Johns	Spanish I
184	Zone 5, Level 1	2.61	2.47	San Marcos	pre-Castillo aboriginal
186	Zone 5, Level 2	2.40	2.22	San Marcos	"
166	Floor 2	2.96	2.87	Green glass	British floor
none	Floor 3	w-2.80 e-2.74	2.70	no artifacts	Spanish I
186	Area 2	2.61	2.54	St. Johns	pre-Castillo aboriginal
none	Feature 14	3.25		-	coquina ledge- Spanish I

West Latrine - Test Pit 1

none	Zone 1	3.39	3.36	-	Modern
170	Zone 2	3.36	3.13	brass rifle shell casing	American period
173	Zone 3	3.13	3.03	hand painted pearlware	American period
174	Zone 3 (in Feature 15)	3.06	2.97	slipware	American period
187	Zone 4	2.86	2.75	shell edged pearlware	British fill
188	Zone 5	2.75	2.43	San Marcos	British fill
190	Zone 5 (in Feature 15)	2.91	2.77	Olive Jar	British fill
192	Zone 6	2.74	2.71	St. Johns	Floor 3 deteriora- tion
193	Zone 7	2.71	2.68	San Marcos	Aboriginal
194	Zone 8	2.68	2.47	San Marcos	Aboriginal
198	Zone 9	2.47	2.30	San Marcos	Aboriginal

Table 18, cont'd. Latrine Provenience Guide

FS#	Provenience	Top	Base	TPQ	Cultural Associati
172	Surface 1	3.25	3.06	mini ball	American
181	Floor 2	3.03 <sup>E</sup>	2.91	brass button	British P
none	Feature 15	3.35	2.81		British/S nish II l
175	Area 1	2.95	2.85	San Marcos	soil disc tion:Span
none	Area 2	2.93	2.83	-	"
176	Area 3	2.93	2.91	St. Johns	"
177	Area 4	2.95	2.81	St. Johns	"
178	Area 5	3.00	2.77	iron nail	"
189	Area 6	2.95	2.73	Pipestem	"
179	Area 7	2.94	2.92	St. Johns	"
191	Floor 3	2.78	2.71	UID aborigi- nal	1750-1763
195	Area 10	2.47	2.30	no artifact	soil disco tion:pre-l
197	Area 11	2.46	2.38	San Marcos	"
196	Area 12	2.44	2.30	San Marcos	"
none	Feature 17	2.30	1.92		Aboriginal

West Latrine - Test Pit 2 (in courtyard)

none	Zone 1	3.26	3.24	unscreened	1952 fill
none	Zone 2	3.24	3.21		"
205	Zone 3	2.95	2.82	red roof tile	
209	Zone 4	2.82	2.79		
210	Zone 5	2.79	2.77	San Marcos	
227	Zone 6	2.77	2.54	St. Johns	
229	Zone 7	2.54	2.33	no artifacts	pre-aborigi leach zon
200	Feature 18, Level 1	3.21	3.14	unscreened surface	
203	Feature 18, Level 2	3.14	3.04	annular ware	
none	Surface 2	3.04	2.97	no artifacts	
212	Floor 3	2.80	2.74	Olive jar	
201	Area 1	3.08	2.93	St. Johns, red brick	

Table 18, cont'd. Latrine Provenience Guide

FS#	Provenience	Top	Base	TPQ	Cultural Association
202	Area 2	3.08	2.95	Iron oxide	
211	Area 3, Level 1	2.93	2.69	Red brick	
217	Area 3, Level 2	2.69	2.27	Nail fragments	
216	Area 4	2.89	2.57	St. Johns	
223	Area 5	2.57	2.38	St. Johns	
222	Area 6, Level 1	2.48	2.33	St. Johns	
228	Area 6, Level 2	2.33	1.80	St. Johns	

Table 19. East Latrine Artifact Distribution  
(+-indicates presence)

Artifact Description	Zone 2 Level 3	Floor 2	Zone 4	Area 2	Zone 5 Level 1	Zone Level
<u>CERAMICS</u>						
<u>Hispanic</u>						
TOTAL	-	-	-	-	-	-
<u>Other European</u>						
TOTAL	-	-	-	-	-	-
<u>Aboriginal</u>						
St. Johns Plain			3 .750	1 1.000		
St. Johns Stamped			1 .250		3 .375	
San Marcos Plain					5 .625	1
Lamar-like Bold Incised	1 1.000					
discards						1
TOTAL	1 1.000	-	4 1.000	1 1.000	8 1.000	2 1.
TOTAL CERAMICS	1 1.000	-	4 1.000	1 1.000	8 1.000	2 1.
<u>NON-CERAMIC MATERIAL CULTURE</u>						
<u>Glass</u>						
green	4	1				
clear		2			1	
brown emerald green	3 3					
<u>Iron</u>						
nail fragment	4	6				
lumps/flakes	+	+				
Brass button		1				
Lead shot		2				
Kaolin Pipe Bowl	1	1				
Coprolite					1	
Chert debitage		1				
Rock	+					
Black electric wire tape	1					
clay			+		+	

143  
Table 19, cont'd. East Latrine Artifact Distribution  
(+-indicates presence)

Artifact Description	Zone 2 Level 3	Floor 2	Zone 4	Area 2	Zone 5 Level 1	Zone 5 Level 2
<u>Construction Material</u>						
coquina		+				
tabby	+					
mortar	+	+	+			
brick	+	+				
slate			+			

144  
Table 20. West Latrine, Test Pit 1: Artifact Distribution  
(+-indicates presence)

Artifact Description	Zone 2		Feature 15 Surface 1		Zone 3		Zone 3 Feature 15		Area 3		Area 4	
<u>CERAMICS</u>												
<u>Hispanic</u>												
Puebla Blue on white												
UID Plain majolica					1	.143						
Olive Jar unglazed			2	.149	1	.143	4	.333				
TOTAL	-		2	.149	2	.286	4	.333	-		-	
<u>Other European</u>												
UID coarse earthenware			8	.571								
North Devon gravel tempered ware			1	.071								
Slipware					1	.143	1	.083				
Creamware	1	.100										
Plain pearlware					1	.143						
Early painted pearlware			1	.071	1	.143						
Brown salt-glazed stoneware					1	.143						
white salt-glazed stoneware			1	.071								
TOTAL	1	.100	11	.785	4	.571	1	.083	-		-	
<u>Aboriginal</u>												
St. Johns Plain	1	.100							2	1.000	1	1.0
St. Johns Stamped							1	.083				
San Marcos Plain	4	.400					1	.083				
San Marcos Stamped	1	.100					1	.083				
Deptford check-stamped												
UID sand-tempered	1	.100			1	.143						
UID Aboriginal discards	2	.200	1	.071			1	.083				
TOTAL	9	.900	1	.071	1	.143	7	.583	2	1.000	1	1.0
TOTAL CERAMICS	10	1.000	14	1.004	7	1.001	12	.993	2	1.000	1	1.0



Table 20, cont'd. West Latrine, Test Pit 1: Artifact Distribution  
(+-indicates presence)

Artifact Description	Area 5		Area 7		Area 6		Zone 5, interior Feat. 15		Floor 3		Zone 6	
<u>CERAMICS</u>												
<u>Hispanic</u>												
Puebla Blue on white												
UID Plain majolica												
Olive Jar, unglazed							1	.111				
TOTAL	-		-		-		1	.111	-		-	
<u>Other European</u>												
UID coarse earthenware												
North Devon gra- vel tempered ware												
Slipware												
Creamware												
Plain pearlware												
Early painted pearlware												
Brown salt-glazed stoneware												
white salt-glazed stoneware												
TOTAL	-		-		-		-		-		-	
<u>Aboriginal</u>												
St. Johns Plain 4	.400		1 1.000		2 .125		5 .555				6 .222	
St. Johns Stamped					2 .125						13 .482	
San Marcos Plain 1	.100											
San Marcos Stamped					3 .188		3 .333					
Deptford Check- stamped												
UID sand-tempered											2 .074	
UID Aboriginal discards	5 .500				9 .564				1 1.000		6 .222	
TOTAL	10 1.000		1 1.000		16 1.002		8 .888		1 1.000		27 1.000	
TOTAL CERAMICS	10 1.000		1 1.000		16 1.002		9 .999		1 1.000		27 1.000	

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Table 20, cont'd. West Latrine, Test Pit 1: Artifact Distribution  
(+-indicates presence)

Artifact Description	Zone 7 Level 1		Zone 8 Level 1		Area 12		Area 1		Zone 9 Level 1	
<u>CERAMICS</u>										
<u>Hispanic</u>										
Puebla Blue on white										
UID Plain majolica										
Clive Jar, unglazed										
TOTAL	-		-		-		-		-	
<u>Other European</u>										
UID coarse earthenware										
North Devon gravel tempered ware										
Slipware										
Creamware										
Plain Pearlware										
Early painted pearlware										
Brown salt-glazed stoneware										
white salt-glazed stoneware										
TOTAL	-		-		-		-		-	
<u>Aboriginal</u>										
St. Johns Plain	25	.298	5	1.000	1	.500				
St. Johns Stamped	8	.095								
San Marcos Plain	6	.071			1	.500				
San Marcos Stamped	8	.095					1	1.000	13	.867
Deptford check-stamped									2	.133
UID sand-tempered										
UID Aboriginal	3	.036								
discards	34	.405								
TOTAL	84	1.000	5	1.000	2	1.000	1	1.000	15	1.000
TOTAL CERAMICS	84	1.000	5	1.000	2	1.000	1	1.000	15	1.000

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Table 20, cont'd. West Latrine, Test Pit 1: Artifact Distribution  
(+-indicates presence)

Artifact Description	Zone 2	Feature 15	Zone 3	Zone 3 Feat. 15	Area 3	Area 4
<u>Glass</u>						
olive green	32	4	40	10		
light green	10		3			
clear	27		6			
clear flat			7	4		
<u>Iron</u>						
whole nails	7			7		
nail fragments	122		46			
spike fragment	2					
bucket rim fragment	2					
ring			1			
ornament				1		
tube		1				
fragments/lumps/ flakes	+		+	+		
<u>Lead</u>						
minie ball	1	1	2			
shot	1					
<u>Brass</u>						
button			2			
rifle casing	1					
<u>Construction Material</u>						
coquina	+		+	+		
tabby	+		+			
mortar	+		+			
plaster				+		
daub						
brick	+	+	+	+	+	+
Dark clay ball				1		
Kaolin pipe stem	1					
Bone button	1	1	1			
Coprolites				3		
Flint	2					
Rock	+					

Table 20, cont'd. West Latrine, Test Pit 1: Artifact Distribution  
(+-indicates presence)

Artifact Description	Area 5	Area 7	Area 6	Zone 5, interior Feat. 15	Floor 3	Zone 6
<u>Glass</u>						
olive green						
light green						
clear						
clear flat						
<u>Iron</u>						
whole nails						
nail fragment	1		1			
spike fragment						
bucket rim fragment						
ring						
ornament						
tube						
fragments/lumps/ flakes	+		+	+		
<u>Lead</u>						
minie ball						
shot						
<u>Brass</u>						
button						
rifle casing						
<u>Construction Material</u>						
coquina	+	+	+			+
tabby	+					
mortar		+				+
plaster						
daub			+	+		
brick	+	+	+	+		
Dark clay ball						
Kaolin pipe stem			1			
Bone button						
Coprolites						
Flint						
Rock			+			

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Table 20, cont'd. West Latrine, Test Pit 1: Artifact Distribution  
(+-indicates presence)

Artifact Description	Zone 7 Level 1	Zone 8 Level 1	Area 12	Area 1	Zone 9 Level 1
<u>Glass</u>					
olive green					
light green					
clear					
clear flat					
<u>Iron</u>					
whole nails					
nail fragments					
spike fragment					
bucket rim fragment					
ring					
ornament					
tube					
fragments/flakes/ lumps					
<u>Lead</u>					
minie ball					
shot					
<u>Brass</u>					
button					
rifle casing					
<u>Construction Material</u>					
coquina		+			
tabby					
mortar	+				
plaster					
daub		+			
brick		+			
Dark clay ball					
Kaolin pipe stem					
Bone button					
Coprolites	3				
Flint					
Rock					

West Latrine, Test Pit 2, Courtyard Excavations

A single test unit was excavated adjacent to the west privy at the request of the project architect. This unit allowed the observation of the sub-grade condition of the ramp's north footing, as well as providing information on courtyard surfaces and latrine alterations. The location of the unit, designated as "Test Pit 2, West Latrine", is shown in Figure 20, with the provenience data and artifact distribution information in Tables 21-22. Information on the condition of the footing can be found in the project architect's report. The unit's slightly irregular size was due to the desire to remove the contemporary courtyard paving stones along a natural break.

A chronological sequence of activity conforming closely to that found in the latrines was documented in Test Pit 2. The single major exception was the presence of soil zones containing extremely minor amounts of cultural materials beneath the aboriginal midden layer found at the earliest levels of the latrine occupation. These layers were slightly disturbed by the ramp construction in their immediate vicinity, and are shown on Figure 28 as Zones 7-8, although they contained only aboriginal sherds.

Zone 6 (Layer "T", Fig. 28) was the aboriginal midden layer predating the Castillo construction. This was apparent at 2.74 MMSL, within 3 cm. of the elevation at which the layer was found inside the west latrine. This conforms closely also to the elevation of this layer as it was excavated by Harrington in 1953 (2.60 MMSL) (Harrington, Manucy and Griffin 1956:117).

Resting on this aboriginal midden layer was a decomposed



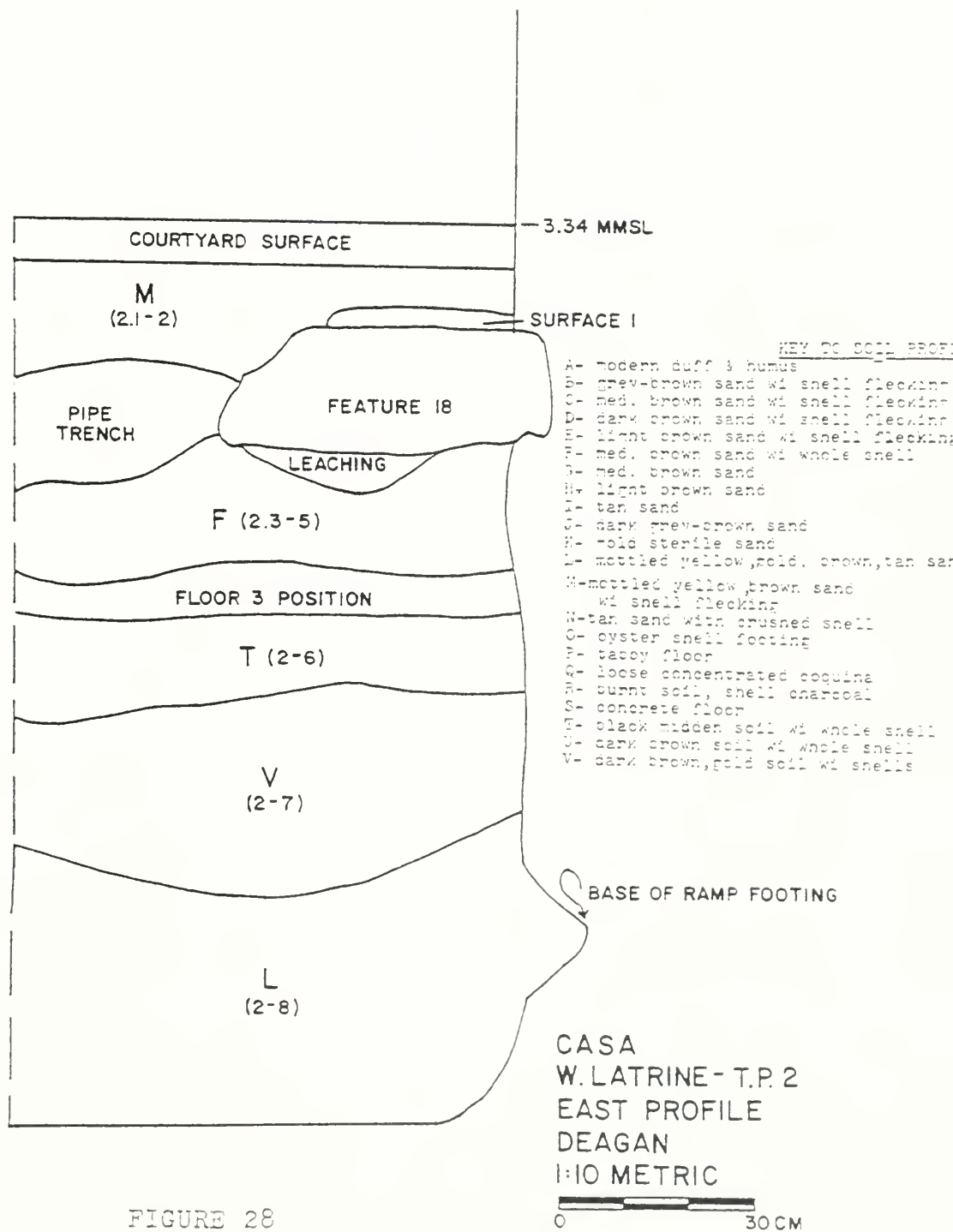


FIGURE 28

West Latrine/Courtyard  
Test Pit 2, East Profile

tabby floor, roughly 10 cm. thick (top: 2.80 MMSL). This is the earliest floor level in the unit, suggested as a first Spanish period (and quite likely the very first grade level) surface in the courtyard. It is within 2 cm. of the elevation of Floor 3 in the west latrine.

Above Floor 3 a 15 cm. thick layer of soil was deposited, and excavated as Zones 3-5 (Fig. 28). No dateable material was present in this deposit, although it was capped by a very thick (20 cm.) layer of tabby, containing a sherd of annular ware (post-1795). This layer of tabby was designated Feature 18 (since it originally did not appear as a floor, having been intruded into by a modern pipetrench). The top elevation of this surface was at 3.17 MMSL, and is believed to represent a post-1795 re-flooring of that part of the courtyard, and raising of the grade. This floor is within 14 cm. (6.3") of the Floor 2 elevation inside the latrines, and may have been constructed during the early years of the second Spanish period. This tabby pavement was also located by Harrington et al. at 3.16 MMSL (Harrington et al. 1956:117).

The Feature 18 surface appears to have been poured in at least two, and possibly three layers. The uppermost layer appears as a fine-aggregate mortar cap, 4-5 cm. thick (Surface 1, Fig. 28). The lower, thicker layer is of crushed shell aggregate tabby, somewhat decomposed. Feature 18 was intruded upon by a pipetrench, which removed the entire north half of the floor in the test unit. A copper pipe and an iron pipe were encountered in the trench. No dateable artifacts were recovered from the pipe trench fill. It was, however, covered by a 15 cm. thick deposit (also

covering Feature 18-see Fig. 28, Zones 1-2) containing plastic. This deposit (Zones 1-2), thus, are 20th century deposits, pre-dating the construction of the present courtyard surface (1952). It would appear from this sequence that Feature 18 represents the courtyard surface from a point in time just after 1790, until 1952.

The general stratigraphy in this unit thus indicates three grade levels in the courtyard: the first Spanish period tabby Floor 3 (2.80 MMSL); the 1790 Feature 18 (3.17 MMSL) and the contemporary courtyard surface (3.34 MMSL). The dates for these grades are expected to be refined with the correlation of this data with the historical data sections of the Castillo project.

Most of the "areas" (soil discolorations) in the unit were the result of portions of the floors having been broken or decomposed. Exceptions to this, however, were Areas 1-3. These were all part of a large pit adjacent to the ramp/latrine wall, in the southwest corner of the test unit. It extended 50 cm. north from the wall and an unknown distance to the west. Areas 1 and 2 were the upper, rubble-filled 15 cm. of the pit, while Area 3 was the lower 46 cm. The pit contained large amounts of red brick and coquina block rubble, although no dateable artifacts were present in it. The east edge of Area 3 was 1.1 m. west, along the latrine wall, from the west edge of the west latrine doorway. It initiated at 3.08 MMSL, intruded through Feature 18, and extended to 2.27 MMSL, which was also the exact elevation of the ramp's footing base.

This pit was apparently a construction pit excavated at some

time after the establishment of Feature 18 (post-1795), in order to effect repairs to the ramp wall. This is further supported by the presence of alternating layers of coquina rubble and grey cement extending in the ramp wall from the top of the construction pit to the base of the wall (Fig. 29). The ramp is known to have been repaired in 1885 (Luis Arana, personal communication, St. Augustine 1980), and this repair is highly likely to have resulted in Areas 1-3, and the ramp wall configuration. It was also during this time that the circular hole discussed above was most likely to have been filled in.





FIGURE 29

est Latrine (Courtyard Pit), Test pit 2  
South Elevation

time after the establishment of Feature 18 (post-1795), in order to effect repairs to the ramp wall. This is further supported by the presence of alternating layers of coquina rubble and grey cement extending in the ramp wall from the top of the construction pit to the base of the wall (Fig. 2g). The ramp is known to have been repaired in 1885 (Luis Arana, personal communication, St. Augustine 1980), and this repair is highly likely to have resulted in Areas 1-3, and the ramp wall configuration. It was also during this time that the circular hole discussed above was most likely to have been filled in.



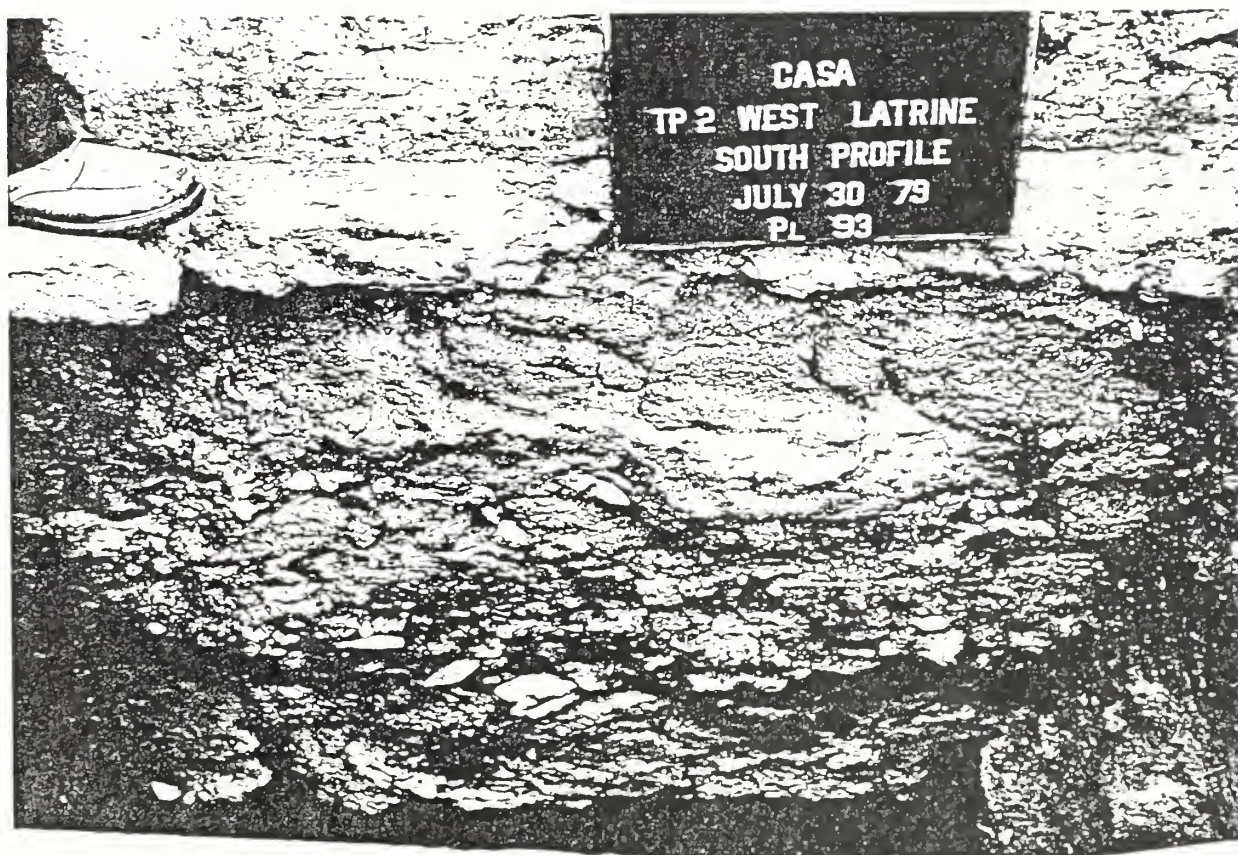


FIGURE 29

West Latrine (Courtyard Pit), Test pit 2  
South Elevation

Table 21. Courtyard Pit (West Latrine, Test Pit 2) Provenience Guide  
(All elevations in meters above mean sea level)

PS#	Provenience	Top	Base	TPQ	Cultural Association
none	Zone 1	3.26	3.24	Modern rubble	Contemporary courtyard base
none	Zone 2	3.24	3.21	Plastic	"
200	Feature 18, Level 1	3.17	3.14	Mortar, rubble	
203	Feature 18, Level 2	3.14	3.04	Annular ware	Tabby floor-Spanish
204	Feature 18, Level 3	3.04	2.91	Bone button, Red brick	Courtyard surface (post-1790)
205	Zone 3	2.91	2.82	Barrel tile	Fill between Spanish and Spanish II courtyard surfaces
209	Zone 4	2.82	2.79	-	"
210	Zone 5	2.79	2.77	San Marcos	"
227	Zone 6 (Floor 3)	2.74	2.54	Daub/mortar	Disturbed aboriginal midden
229	Zone 7	2.54	2.33	Sand tempered plain aboriginal	Base- aboriginal midden
222	Zone 8, Level 1	2.48	2.33	St. Johns	pre-aboriginal midden
228	Zone 8, Level 2	2.33	1.80	St. Johns	"
201	Area 1	3.08	2.93	Red brick	Area of deterioration within Feat. 18 floor
202	Area 2	3.08	2.95	Red brick	"
211	Area 3, Level 1	2.93	2.69	Red brick	Construction repair trench, post-1763, 1780
217	Area 3, Level 2	2.69	2.27	Red brick	"
216	Area 4	2.89	2.57	St. Johns	soil discoloration Spanish II
223	Area 5	2.57	2.38	St. Johns	Aboriginal
N/A	Courtyard Floor	3.34	3.28	-	Present surface
212	Floor 3	2.80	2.74	Olive Jar	Spanish I Courtyard surface

Table 22. Courtyard Pit, Test Pit 2: Artifact Distribution  
(+-indicates presence)

Artifact Description	Feature 18 Level 2	Feature 18 Level 3	Zone 3	Zone 5	Zone 6	Zone 7
<u>CERAMICS</u>						
<u>Hispanic</u>						
UID Majolica		1 .056				
Olive Jar						
TOTAL	-	1 .056	-	-	-	-
<u>Other European</u>						
Annular ware	1 1.000					
TOTAL	1 1.000	-	-	-	-	-
<u>Aboriginal</u>						
St. Johns Plain		9 .500	2 .200		14 .241	
St. Johns Stamped		1 .056	4 .400			
San Marcos Plain				1 1.000		
San Marcos Stamped		1 .056	1 .100			
UID Aboriginal discards		2 .111	3 .300		6 .103	
UID sand-tempered plain		2 .111			28 .483	1 .250
TOTAL	-	17 .944	10 1.000	1 1.000	10 .172	3 .750
TOTAL CERAMICS	1 1.000	13	10 1.000	1 1.000	58 .999	4 1.000
<u>NON-CERAMIC MATERIAL CULTURE</u>						
<u>Glass</u>						
green						
<u>Iron</u>						
nail fragment	13					
lumps/flakes	+	+	+			
<u>Lead</u>						
musket ball	1					
flattened shot	1					
Brass tack	1					
One-hole bone button		1				
Red clay bead	1					
Flint	2					
Kaolin Pipe stem		1				

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Table 22, cont'd. Courtyard Pit, Test Pit 2: Artifact Distribution (+-indicates presence)

Artifact Description	Zone 8 Level 1		Zone 8 Level 2		Area 1		Area 2		Area 3 Level 1		Area 3 Level 2	
<u>CERAMICS</u>												
<u>Hispanic</u>												
UID Majolica												
Olive Jar												
TOTAL	-		-		-		-		-		-	
<u>Other European</u>												
Annular ware												
TOTAL	-		-		-		-		-		-	
<u>Aboriginal</u>												
St. Johns Plain	1	.500	2	.500					3	.500	1	.25
St. Johns Stamped	1	.500			4	.400			1	.167		
San Marcos Plain									1	.167	1	.25
San Marcos Stamped												
UID sand-tempered plain												
UID Aboriginal					6	.600			1	.167		
discards			2	.500							2	.50
TOTAL	2	1.000	4	1.000	10	1.000	-		6	1.001	4	1.000
TOTAL CERAMICS	2	1.000	4	1.000	10	1.000	-		6	1.001	4	1.000
<u>NON-CERAMIC MATERIAL CULTURE</u>												
<u>Glass</u>												
green									1			
<u>Iron</u>												
nail fragment											1	
lumps/flakes									+		+	
<u>Lead</u>												
musket ball												
flattened shot												
Brass tack												
Bone button												
Red clay bead												
Flint												
Kaolin pipestem												



Table 22, cont'd. Courtyard Pit, Test Pit 2: Artifact Distribution (+-indicates presence)

Artifact Description	Area 5	Floor 3	Area 4			
<u>CERAMICS</u>						
<u>Hispanic</u>						
UID Majolica						
Olive Jar		1 .143				
TOTAL	-	1 .143	-			
<u>Other European</u>						
Annular ware						
TOTAL	-	-	-			
<u>Aboriginal</u>						
St. Johns Plain		3 .429				
St. Johns Stamped	1 1.000		2 .333			
San Marcos Plain			1 .167			
San Marcos Stamped						
UID sand-tempered plain			1 .167			
UID Aboriginal discards		3 .429	2 .333			
TOTAL	1 1.000	6 .858	6 1.000			
TOTAL CERAMICS	1 1.000	7 1.001	6 1.000			
<u>NON-CERAMIC MATERIAL CULTURE</u>						
<u>Glass</u>						
green						
<u>Iron</u>						
nail fragment						
lumps/flakes						
<u>Lead</u>						
musket ball						
flattened shot						
Brass tack						
Bone button						
Red clay bead						
Flint						
Kaolin Pipe stem						

Table 22, <sup>160</sup>cont'd.

Artifact Description	Feature 18 Level 2	Feature 18 Level 3	Zone 3	Zone 5	Zone 6	Zone 7
<u>Construction Material</u>						
coquina	+	+		+		
tabby						+
mortar	+	+		+	+	
plaster		+				+
daub			+	+		
slate		+				
brick	+	+				
barrel tile			+			



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Table 22, cont'd.

Artifact Description	Zone 8 Level 1	Zone 8 Level 2	Area 1	Area 2	Area 3 Level 1	Area 3 Level 2
<u>Construction Material</u>						
coquina			+	+	+	+
tabby						+
mortar				+		
plaster						
daub						
slate						
brick			+	+	+	+
barrel tile						

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Table 22, cont'd.

Artifact Description	Area 5	Floor 3	Area 4			
<u>Construction Material</u>						
coquina	+	+	+			
tabby						
mortar						
plaster		1				
daub						
slate						
brick	1					
barrel tile						

Seminole Room Excavations (Room Number 4)

The Seminole Room, located at the southern end of the western bank of casemates, is in that side of the fort which was the last to be completed (Arana and Manucy 1977:27-28). In 1675, the west side of the Castillo was essentially open, but was protected by a twelve foot high earthwork with two half bastions. The earthwork was faced with stone, and fronted by a fourteen foot wide, ten foot deep moat (this configuration can be seen in Map 1 , Appendix i). By 1685, not only were the walls and bastions constructed, but the rooms on all sides, including the west, were completed (ibid:39). At some time between 1740 and 1756, the west rooms were expanded eastward into the courtyard; and the walls and roofs of the casemates rebuilt and vaulted (Appendix 1, Map 6 ; after Arana and Manucy 1977:45).

Little is known of the "Seminole Room"s function at that time, other than that it was used to store provisions (ibid: 45; Arredondo 1737). During the first half of the 19th century the room was used briefly as a prison for Seminole War Indian prisoners, including Osceola. Allegedly, it was from the Seminole Room that Osceola escaped by squeezing through the window high in the west wall.

Today the room is floored in tabby and concrete, and contains a stone banquette along the room's west side. This platform is 1.2 meters high and 2 meters wide (east-west).

Excavations were carried out in this room for several purposes, including:

1. Observation of conditions of sub-grade walls and footings to determine necessity for stabilization,
2. Determination of the sequence and numbers of floors in the room,
3. Location of the pre-1756 courtyard wall (i.e., the room's pre-1756 east wall); and any other evidence for the "big change",
4. Location of evidence for the pre-1685 earthwork and moat configuration,
5. Investigation of the stone platform in order to learn about its dates and functions,
6. Recovery of information regarding room functions and uses.

In order to approach these issues, two trenches were excavated in the Seminole Room. Trench 1 was located along the north wall in order to expose the platform base, to locate the earlier courtyard wall and to observe the room's north wall foundation. Trench 2 was placed along the north half of the room's east wall to observe that wall's footing, and the relationships between the rooms north and east wall footings, as well as that between room 4 and room (Figure 30).

#### Archeological Data

##### Pre-1685 Phase

The earliest activity evident archeologically in the Seminole Room was the disturbance of the pre-Castillo aboriginal village by the construction of the 1675 west earthwork and moat discussed above. Figure 31 shows the location of the 1675 earthwork as shown on the Salazar map (Appendix 1,

COURT

TEST PIT 2

TEST PIT 1 1756 EAST ROOM WALL

PLATFORM

SEMINOLE ROOM

N

CASA COMPOSITE  
SEMINOLE ROOM  
8-3-79  
DEAGAN  
SCALE 1:50



FIGURE 30

Locations of Test Units in the Seminole Room

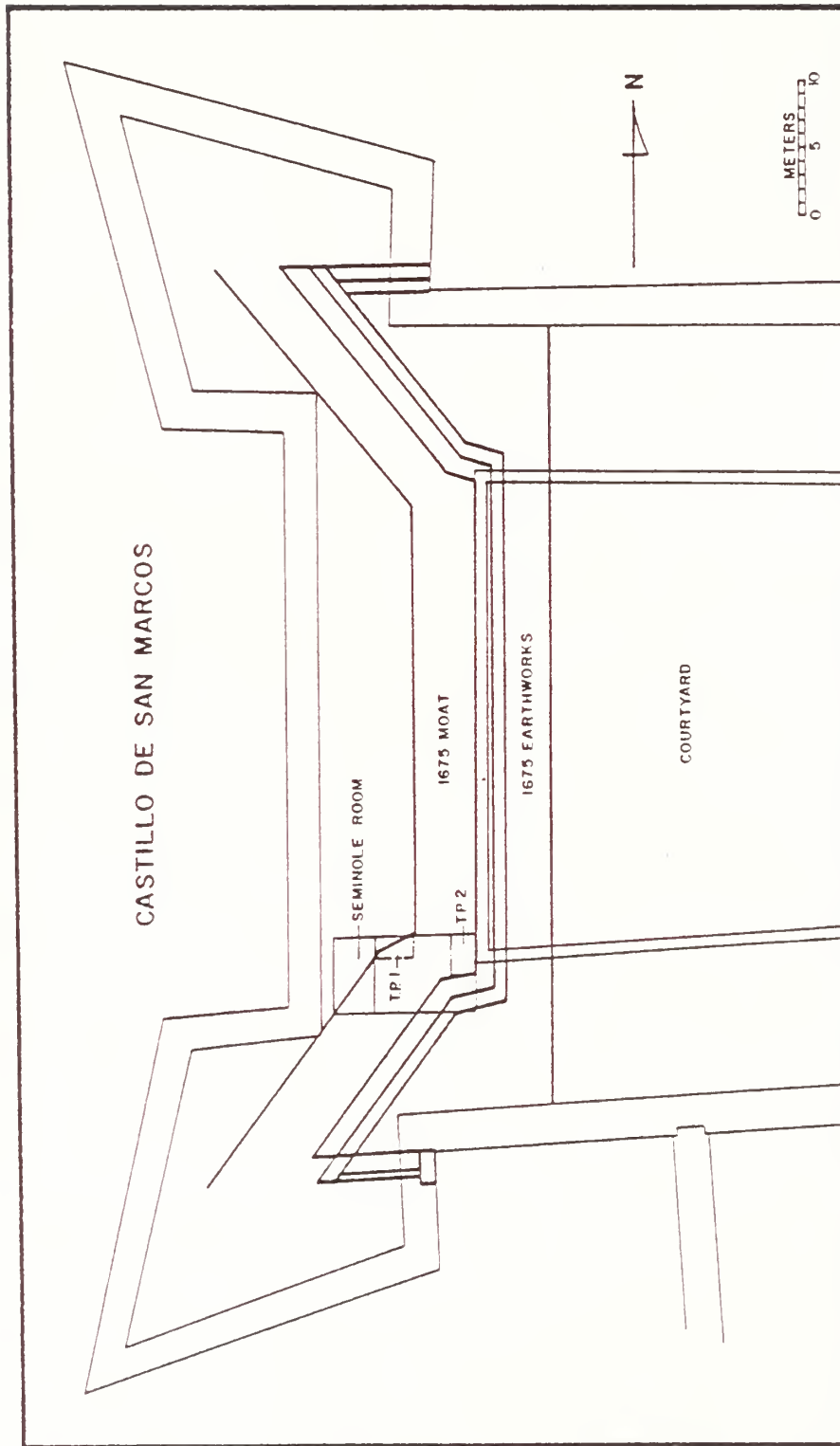


FIGURE 31

Relationship of present Seminole Room configuration to  
that shown on the 1675 Galazar Map



Map 1); in relation to both the present Seminole Room configuration, and the location of the excavation units.

It can be seen that Test Trench 1 cuts across the indicated location of the moat's southernmost east-west jog. Test Pit 2 extends across the stone-faced inner corner of the southern half bastion, extending at its north end into the edge of the moat.

The archeological evidence suggests that the 1675 Salazar map was quite accurate. The west profile of Test Trench 1 shows an abrupt and deep discontinuity at precisely the location expected, if indeed the pit cut across the moat's east-west jog (Figure 32). In this figure, "T" is dark midden soil containing whole shells, which was excavated as Zone 4, and which appears to have been a primary deposit. This was possibly the ground surface prior to the Castillo's construction. The top elevation of this zone, at 2.87 MMSL, is only 10 cm. higher than the top of the same zone in the latrine excavation units. Only aboriginal materials were recovered from this zone.

The areas designated on Figure 32 as M, L and U are believed to have been the fill added to the area between 1675 and 1685. Excavated respectively as Area 7, Zone 3 and Area 3, they contained no dateable material. Unlike Zone 4 (T), however, the presence of olive jar fragments, unglazed, wheel thrown coarse earthenwares, iron flakes and a chip of red brick or tile indicates that these deposits were made during the historic period.

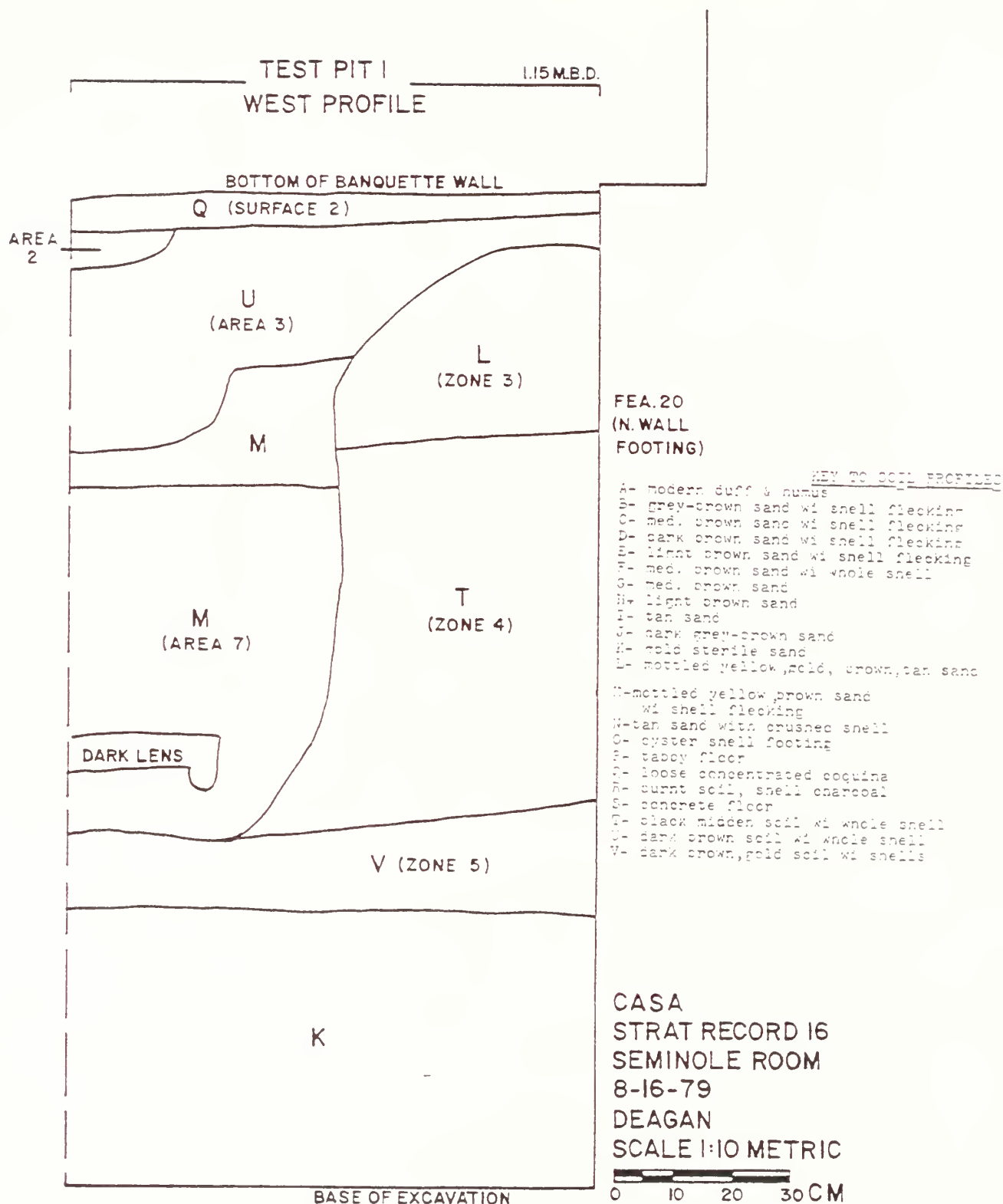


FIGURE 32

Seminole Room, Test Pit 1, West Profile

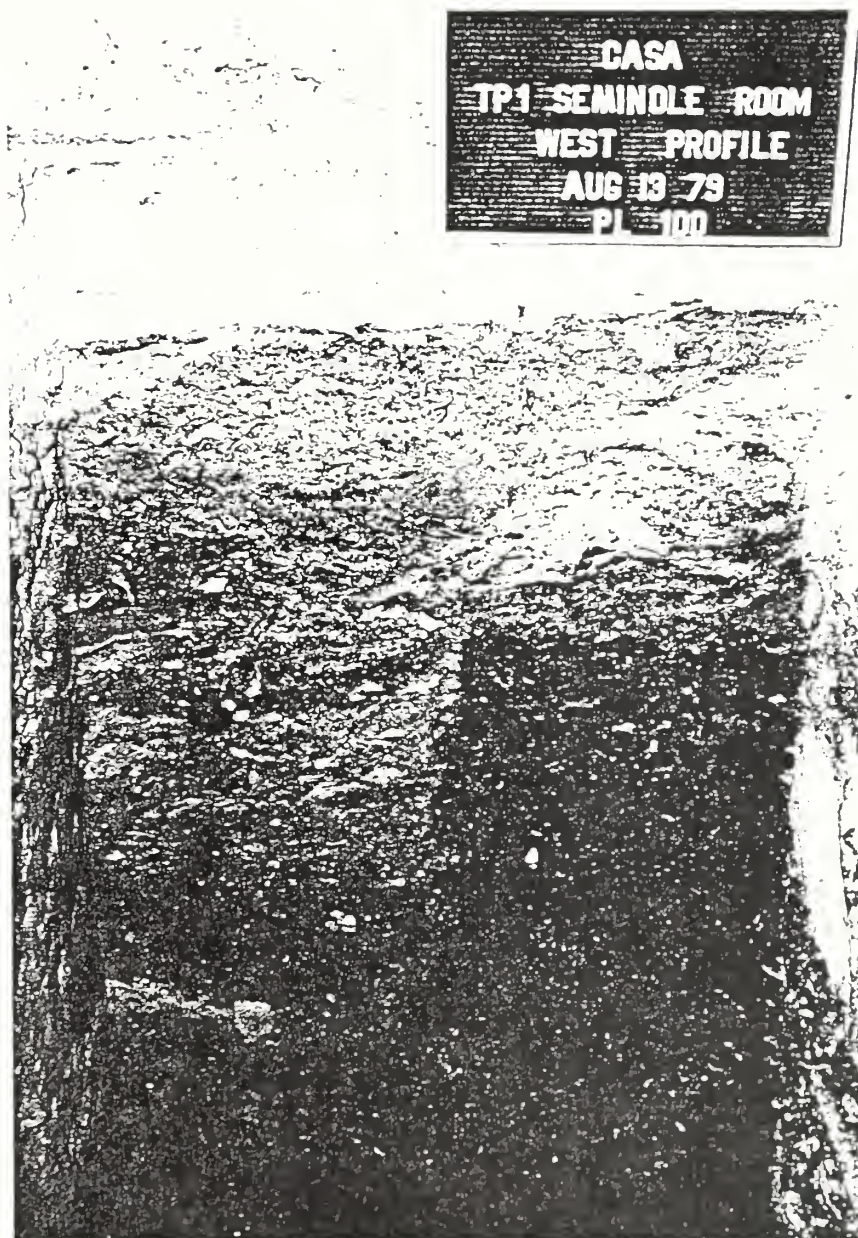


FIGURE 33  
Seminole Room, Test Pit 1, West Profile

Zone 5 also appears to have been an undisturbed, aboriginal, pre-moat deposit, and is actually the bottom part of Zone 4 itself. The bases of midden zones in St. Augustine generally assume a slight mottling with the gold sterile sand upon which they rest, and although they represent part of the behavioral process which resulted in the midden proper, they are excavated as separate deposits to ensure tight vertical control.

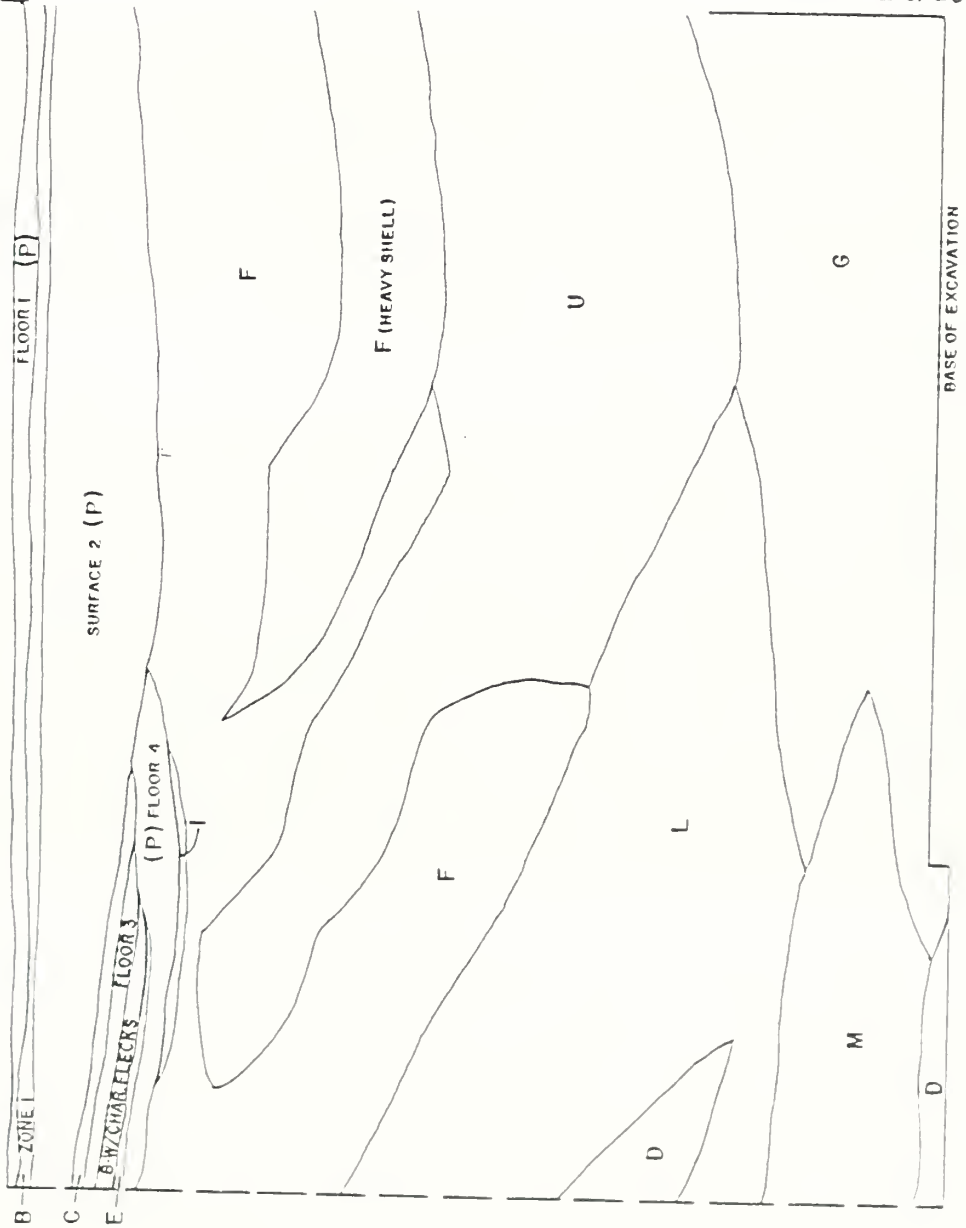
The only anomalous fact in this interpretation of Test Pit 1 stratigraphy is the indicated depth of the moat, which at this point is only about three feet (in contrast to the ten feet noted by Salazar). The location of the pit at the extreme edge of the old moat area may account for this; since the moat was probably excavated in stages, or irregularly; which would have resulted in stepped, irregular edges on the interior of the moat itself.

Test Pit 2 provides additional data concerning the moat. Figures 34 and 35 show the west profile of this unit, which reveals a concave layered stratification, such as would be expected from the infilling of a moat. The unit is apparently near the southern edge of the moat's north-south extent.

The top of Zone 5 (Fig. 34, Layer "F") represents the post-filling level of the area in 1685 (3.27 MMSL). This is within 4 cm. of the Test Pit 1 post moat-fill ground surface. Very little dateable material was recovered from the moat fill in this unit, other than a sherd of Ichucknee Blue on White majolica (post-1600) in Zone 8. Excavation was sus-

TEST PIT 2  
WEST PROFILE

1 MBD.



KEY TO SOIL PROFILES

- A- modern duff & humus
- B- grey-brown sand w/ shell flecking
- C- med. brown sand w/ shell flecking
- D- dark brown sand w/ shell flecking
- E- light brown sand w/ shell flecking
- F- med. brown sand w/ whole shell
- G- med. brown sand
- H- light brown sand
- I- tan sand
- J- dark grey-brown sand
- K- old sterile sand
- L- mottled yellow, old, brown, tan sand
- M- mottled yellow, brown sand w/ shell flecking
- N- tan sand with crushed shell
- O- oyster shell footing
- P- tabby floor
- Q- loose concentrated coquina
- R- burnt soil, shell charcoal
- S- concrete floor
- T- black midden soil w/ whole shell
- U- dark brown soil w/ whole shell
- V- dark brown, old soil w/ shells

CASA  
STRAT RECORD 15  
SEMINOLE ROOM  
8-16-79  
DEAGAN  
SCALE 1:10 METRIC  
0 10 20 30 CM

FIGURE 34

Seminole Room, Test Pit 2, West Profile





FIGURE 35  
Seminole Room, Test Pit 2, West Profile  
(Photo board mislabeled)



suspended at 1.75 MMSL, due to time constraints, as well as the fact that the base of the moat should have been located at roughly .15 MMSL, some 1.6 meters below the base of the excavation. The additional information that could have been gleaned from a total excavation of moat fill was not considered worth the time and money expenditure, and also the potential damage to the fort itself.

#### Post-1685 Phases

The next construction stage evidenced in the Seminole Room is that of the pre-1756, post 1685 configuration. Feature 21, located in Test Pit 1 (Fig. 30, 36-37), was the room's pre-1756 east wall. This wall is located at 5 meters west of the Seminole room's present east wall at 3.35 MMSL, and is 80 cm. thick. It extends for 1.11 meters at maximum depth. It is comprised of rough-coursed, mortared and irregular coquina blocks. None of the blocks on the west side of the feature are plastered, suggesting that the portion of Feature 21 revealed in Test Trench 1 was below grade during its use (the east face was not fully revealed during excavation). Only about 10 cm. of the top of the feature could have been above grade at the time of moat filling, represented by the top of Area 3 (Fig. 32, "U"), at 3.23 MMSL.

Areas 4, 5 and 6 in Test Pit 1 (see Table 23) were irregular areas of discolored and rubble containing soil adjacent to the west side of Feature 21. These areas, ranging from a maximum top elevation of 3.15 MMSL to a maximum base elevation of 1.80 MMSL are also believed to be related to the con-



FIGURE 36

Seminole Room, Test Pit 1, Features 20 and 21

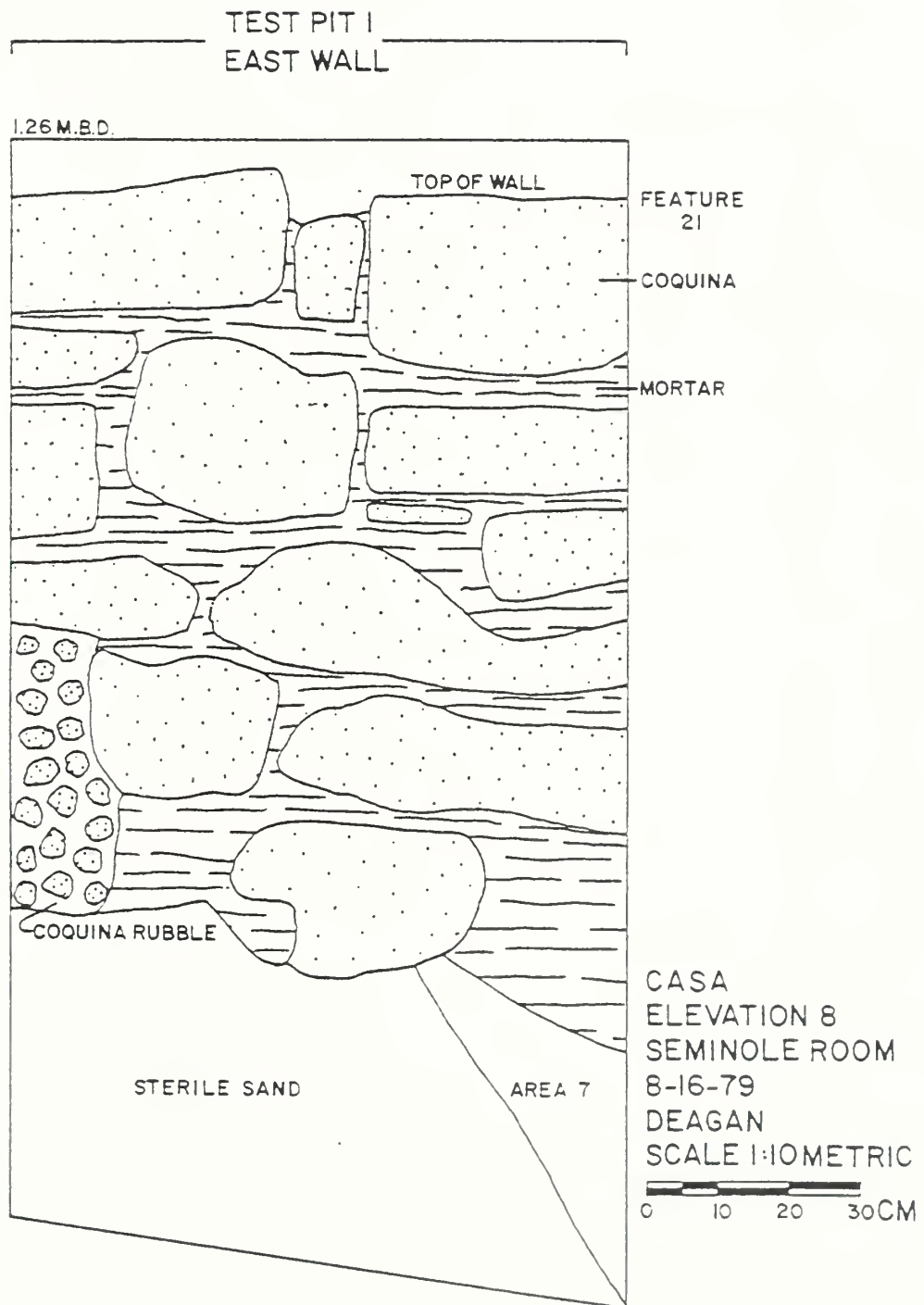


FIGURE 37

Seminole Room, Test pit 1, Feature 21 West face

struction activities of the 1756 period, although their precise functions could not be determined. Only coquina and mortar rubble fragments and one piece of aboriginal pottery were in the fill of those areas. They were possibly a construction trench for Feature 21.

To the west of Feature 21 only a single sub-grade floor was present in the trench. This was Surface 2, a 7 cm. thick layer of compacted, crushed coquina and mortar. This surface was present only to the west of Feature 21; however its juxtaposition to the west side of Feature 21 was broken and irregular, and the surface itself was deteriorated. For that reason, it is difficult to determine with absolute certainty whether the Surface 2 to the west of Feature 21 was poured up to it, or over the top of it. Elevation data indicates that the floor post-dates the wall remnant (the base of Surface 2 and the top of Feature 21 are both at 3.35 MMSL); and the presence of a surface 2 similar to the one in question, to the east of the feature (in both test pits) supports this indication.

The preliminary conclusion is that Surface 2 represents the 1756 renovation floor, both to the east and to the west of Feature 21. Although the Surface 2 to the west of Feature 21 is 11 cm. higher than that in Test Pit 2, this difference is less than that between the east and west ends of the room at the present grade (16 cm.). Apparently the pre-renovation floor of the room was eliminated during that renovation, or the floor was of wood or earth and not detected archeologi-



cally. The only remaining (and doubtful) alternative is that Surface 2 west of Feature 21 is actually the pre-1756 floor, which remained in situ and in use.

This was not the case for the pre-1756 courtyard floor in this area. In both Test Pit 1 (to the east of Feature 21) and Test Pit 2, remnants of that surface are present. Figures 33 and 34 show these remnant surfaces in profile, directly underlying Surface 2. These were designated Floors 3 and 4 during excavation, however, in profile it became apparent that they were broken and deteriorated layers of the same surface. The elevations of these floors in Trench 2 were from 3.21 to 3.13 MMSL. This very closely approximates the elevations of a similarly broken and deteriorated surface in Test Pit 1 (east of Feature 21) designated as Surface 3 (3.21 to 3.12 MMSL). No dateable material was recovered from the zones beneath the Surface 3 deposits in either unit; however a sherd of Puebla Blue on White majolica was found in the broken section of the Test Pit 1 portion, indicating that it was broken and covered after 1700. This courtyard surface was probably broken and filled over at approximately the same time that the Feature 21 wall was torn down, the present east wall of the room built; and the room's north wall was rebuilt.

The rebuilding of the north wall of the room is evidenced by Feature 20, a coquina and mortar ledge extending for .20 meters out (to the south) of the present north wall (Fig. 38). The top of this ledge is at 3.38 MMSL (4 cm.



FIGURE 38

Seminole Room, Feature 20 (Ledge along room's  
north wall)



below the top of Surface 2, the post-1756 room floor; and 3 cm. above the top of Feature 21, the pre-1756 courtyard wall). It extended downward to a depth below the base of the excavation, and along the entire north wall of the room from the banquette to the present east wall. Although, as Figure 36 reveals, the juncture of Feature 21 to Feature 20 is even and not broken; other evidence indicates more strongly that Feature 20 is the spread footing of the room's present north wall, and was built in the 1756 renovation. Two pieces of evidence suggest that this is the case, rather than that Feature 20 represents the actual pre-1756 renovation wall next to which and upon which the post-1756 wall was built. The first of these is the presence of the Feature 20 ledge on both sides of Feature 21 (the pre-1756 courtyard wall) at the same elevation and same size. The second piece of evidence is that blocks of coquina with a finished, plastered surface (Fig. 38) are part of the wall construction all the way to the base of the excavation. This is true of both the east and west ends of the wall, indicating that the wall was constructed of previously used interior wall blocks with a finished surface. These could have been taken from either the pre-1756 courtyard wall, or the pre-1756 room's north wall; however neither source could have appeared at a depth of 1.88 MMSL unless they had been placed there after these walls were removed. This is not an unreasonable interpretation in the light of the role of the post-1756 casement walls as compared to that of the pre-1756 walls. The post-renovation

north and south casement walls had to support massive, arched-roof bombproofs and a thick gundeck, and it is unlikely that the foundations for the pre-1756 casement walls (which supported a raftered roof) would have been appropriate. It is quite likely, however, that the foundation for the pre-1756 casement wall was removed and reused; and was probably in the same location as Feature 20 (see Map 6, Appendix 1: Arana and Manucy 1977:45).

#### Post-1756 Renovation Activities

At some time following the 1756 renovation, the banquette in the west end of the room was added. It is suggested that the banquette is a first Spanish period, post-1756 feature, based on the facts that:

1. The banquette rests directly upon Surface 2, which extends underneath it (rather than being poured up to it).
2. Zone 1, which overlies Surface 2 in all other parts of the excavation units, is not present between the banquette and Surface 2. This zone has a TPQ of 1785, provided by a sherd of early hand painted pearlware (Table 23).
3. Traces of finish plaster are evident upon the face of the banquette down to the surface of Surface 2, suggesting that it was in use for at least part of the time that Surface 2 was in use.

During what was probably the second Spanish period (or later), the layer of earth designated as Zone 1 was placed on Surface 2, and Floor 1 (the present room floor) was poured. This date is based on the presence of hand painted pearlware

(post 1785) in the Zone 1 fill of Test Pit 2. Floor 1 is of a very compact, fine shell aggregate tabby concrete, with a hard finish surface. In places this floor is patched with grey concrete. The sealed doorway, centered over Feature 21 in the room's north wall, was constructed, used and filled in during the lifespan of Floor 1 (maximum: second Spanish period to present).

The east wall of the room has a somewhat puzzling sub-grade configuration. The sub grade portion of the wall (evidenced by the absence of plastered surface) began at approximately 3.14 MMSL (the base of Surface 2). The original doorway was at the level of the top of Surface 2 (ca. 3.25 MMSL). It was in the same position as the present doorway; however, it was only about 1 meter wide. The north side of the door was at 25 cm. south of the present north wall of the room, while the south side of the original door was at 1.25 meters south of the present north wall of the room (on either side of these points, there is coquina masonry up to the base of the present door sill, while between those points, there is no masonry between the old door sill (3.25 MMSL) and the present door sill (3.34 MMSL). (Fig. 39)

The juncture of the sub-grade north wall of the Seminole Room with the sub-grade east (courtyard) wall is not even. Between the two sub-grade wall portions is a 30 cm. wide, straight-sided recess, 28 cm. deep (Fig.39). This extended to the base of the excavation. This recess appears to be the outer (east) course of the courtyard wall, without the



FIGURE 39

Seminole Room, Test Pit 2, East Profile  
(Photo board mislabeled)



inner course (the remainder of the room's east wall has an additional inner course, 28-30 cm. thick). Clearly, the north and east walls of the room were not constructed at the same time, and when the second of the two was built, did not meet the already standing wall (or footing). The 30 cm. wide, single-course recess may have been added to fill in below-grade (this would have been under the north edge of the door opening). It is possible that the present east wall of the Seminole Room was already in place when the renovation work began on the west bank of rooms, since that wall is also the western wall of the south bank of rooms. If this was the case, the recess seen at the north end of the room's east wall could have been the result of in-filling after the north wall was built.

#### Seminole Room Excavations Summary

Evidence for four activity stages was recovered archeologically in the Seminole Room. It should be noted that additional insight into the nature of this evidence may be gained when the historic data sections are available. Test Pit 1 was located along the edge of the 1675 moat (at its southern east-west jog:Figure 31), while Test Pit 2 was located near the south end of the moat's north-south extent. The moat was filled at some time after 1675, to an elevation of circa 3.12 MMSL. At this time, Feature 21, the pre-1756 courtyard wall was constructed and, to the west of this, a courtyard surface of tabby and crushed coquina was present at approximately 3.21 MMSL. No floor was evident to the east

of Feature 21.

At some time near the end of the renovation period of 1738-1756, the room was expanded to its present configuration. The Feature 21 wall was removed, and the old north wall of the room probably was also removed at that time and rebuilt with a spread footing (Feature 20). The entire room was floored with a crushed coquina aggregate tabby (Surface 2), and at some time between 1756 and the second Spanish period, the banquette at the west end of the room was added. During the second Spanish period or later, a thin layer of earth was added (Zone 1) and the present floor was established, and subsequently patched through its existence.

All of the goals of this portion of the excavation were met, except for those of learning about the functions of the banquette and the room itself. Excavation inside the banquette itself will be necessary to achieve the former goal, and the limited nature of construction and flooring in the room supports the suggestion that it was used primarily for storage.



Table 23. Seminole Room Provenience Guide

(All elevations in meters above mean sea level)

## Test Pit 1

FS#	Provenience	Top	Base	TPQ	Cultural Association
	Top of ground	NW-3.50	SE-3.39		
214	Zone 1	3.43	3.32	Musket butt plate	post-1785
226	Zone 2 (west of Feature 21)	3.32	3.17	Tabby	1685-1756
253	Zone 2 (east of Feature 21)	3.32	3.17	Barrel tile	1685-1756
233	Zone 3, Level 1 (west of Fea. 21)	3.17	2.87	St. Johns	1685-1756
260	Zone 3, Level 1 (east of Fea. 21)	3.17	2.87	Olive Jar	Moat Fill (backdirt)
239	Zone 3, Level 2	2.87	2.71	Plain aboriginal	Moat Fill
247	Zone 3, Level 3	2.71	2.56	Unglazed European Coarse Earthenware	Moat Fill
256	Zone 3, Level 4 (west of Fea. 21)	2.56	2.35	San Marcos	Moat Fill
258	Zone 4, Level 1 (west of Fea. 21)	2.87	2.72	Plain aboriginal	pre-Castillo
262	Zone 4, Level 2 (west of Fea. 21)	2.72	2.52	St. Johns	pre-Castillo midden
263	Zone 4, Level 3 (west of Fea. 21)	2.52	2.40	St. Johns	pre-Castillo midden
266	Zone 4 (east of Feature 21)	3.07	3.04	San Marcos	pre-Castillo midden
265	Zone 4, Level 4	2.40	2.27	San Marcos	pre-Castillo midden
271	Zone 4, Level 5	2.27	2.12	San Marcos	pre-Castillo midden
272	Zone 5	2.12	2.06	St. Johns	
no artifact	Zone 6	2.05	1.85	-	Moat Fill
213	Feature 19	3.43	3.36	Lead glazed coarse earthenware	Post-Spanish
-	Feature 20	3.38	-	-	1756 Seminole R Casement, North footing
-	Feature 21	3.35	2.12-S 2.31-N	-	1756 Courtyard wall

Table 23, cont'd. Seminole Room Provenience Guide

FS#	Provenience	Top	Base	TPQ	Cultural Association
none	Floor 1 (West of Feature 21)	3.50	3.43	-	Spanish II to present
none	Floor 1 (East of Feature 21)	3.41	3.37	-	Spanish II to present
215	Surface 2	3.42	3.35	Floor sample no artifacts	post-1756 floor
246	Surface 2 (East of Feature 21)	3.37	3.27	Floor sample no artifacts	post-1756 floor
254	Surface 3 (East of Feature 21)	3.21	3.12	Puebla E/W majolica	pre-1756 courtyard surface
221	Area 1	3.32	3.24	San Marcos	Break in Surface
224	Area 2	3.24	3.21	coquina	Moat Fill post-1756
225	Area 3	3.23	2.93	San Marcos	Moat Fill
231	Area 4	3.15	2.99	St. Johns	Feature 21 wall construction, ca.
230	Area 5	2.99	2.80	Tabby frag.	Feature 21 wall construction, ca.
245	Area 6	2.92	1.80	Tabby frag.	Feature 21 wall construction, ca.
240	Area 7, Level 1	3.08	2.69	iron	Moat Fill
275	Area 7, Level 2	2.69	1.95	Red brick fragment	Moat Fill
none	Area 9	1.85	1.67	-	-
219	PM 1	3.28	3.10	mortar	1756 north wall construction
220	PM 2	3.29	3.14	mortar	1756 north wall construction

Test Pit 2

	Top of ground	E-3.37	W-3.34		
232	Zone 1	3.32	3.31	Early painted pearlware	post-1785
237	Zone 2	3.26	3.21	San Luis E/W majolica	post-1756
no artifacts	Zone 3	3.19	3.16	-	1685-1756
no artifacts	Zone 4	3.14	3.12	-	1685-1756
244	Zone 5	S-3.20 N-3.27	S-3.17 N-3.00	Olive Jar	Moat Fill, post-1756
248	Zone 6, Level 1	3.00	2.86	Iron nail	Moat Fill
249	Zone 6, Level 2	2.86	2.72	San Marcos	Moat Fill

Table 23, cont'd. Seminole Room Provenience Guide

FS#	Provenience	Top	Base	TPQ	Cultural Association
250	Zone 6, Level 3 south half	2.72	2.57	St. Johns	Moat Fill
251	Zone 6, Level 3 north half	2.72	2.57	St. Johns	Moat Fill
252	Zone 6, Level 4 south half	2.57	2.42	San Marcos	Moat Fill
255	Zone 6, Level 4 north half	2.57	2.42	Wakulla check stamped	Moat Fill
257	Zone 6, Level 5	2.39	2.26	Olive Jar	Moat Fill
none	Zone 7, Level 1	2.71	2.38	-	Moat Fill
267	Zone 7, Level 2	2.38	2.23	mortar	Moat Fill
no artifacts	Zone 7, Level 3	2.23	2.05	-	Moat Fill
268	Zone 7, Level 4	2.05	1.90	Plain abori- ginal	Moat Fill
269	Zone 8, north half	1.90	1.75	San Marcos	Moat Fill
270	Zone 8, south half	1.90	1.75	Ichtucknee B/W majolica	Moat Fill
no artifacts	Floor 1	3.34	3.32	-	Spanish II to present
235	Surface 2	3.31	N-3.14 S-3.26	Olive Jar	post-1756 floor
no artifacts	Floor 3	3.21	3.19	-	pre-1756 court- yard surface
238	Floor 4	3.16	3.13	San Marcos	pre-1756 court- yard surface
(*Feature 22, Levels 1 and 2, excavated as Zone 6, Levels 3 and 4)					
259	Feature 22, Level 3 north half	2.42	2.27	San Marcos	Moat Fill
261	Feature 22, Level 4 south half	2.27	2.12	Olive Jar	Moat Fill
264	Feature 22, Level 4 north half	2.27	2.12	Olive Jar	Moat Fill
no artifacts	Feature 22, Level 5	2.12	1.86	-	Moat Fill

Table 24. Seminole Room, Test Pit 1: Artifact Distribution  
(+-indicates presence)

Artifact Description	Feature 19	PPM 1	PPM 2	Area 1	Area 2	Area 3
<u>CERAMICS</u>						
<u>Hispanic</u>						
Olive Jar, unglazed						
TOTAL	-	-	-	-	-	-
<u>Other European</u>						
Lead-glazed coarse earthenware	3	.500				
unglazed coarse earthenware						
TOTAL	3	.500				
<u>Aboriginal</u>						
St. Johns Plain						2
St. Johns Stamped	2	.333				
San Marcos Plain						1
San Marcos Stamped				1	1.000	3
UID sand-tempered	1	.167				
UID sherd-tempered						
UID sand & sherd-tempered						
UID shell-tempered						
TOTAL	3	.500	-	1	1.000	7
TOTAL CERAMICS	6	1.000	-	1	1.000	7
<u>NON-CERAMIC MATERIAL CULTURE</u>						
<u>Glass</u>						
clear	1					
<u>Iron</u>						
nails, whole	5					
nail fragments						
flakes/lumps/fragments						+
Bone Handle fragment						
Tar	1					
<u>Construction Material</u>						
tabby		+	+			
coquina			+	+	+	
plaster		+				
mortar						

Table 24, cont'd. Seminole<sup>189</sup> Room, Test Pit 1: Artifact Distribution (+-indicates presence)

Artifact Description	Zone 2	Area 4	Zone 3 Level 1 +	Zone 3 Level 2	Area 7 Level 1	Area 6
<u>CERAMICS</u>						
<u>Hispanic</u>						
Olive Jar, unglazed						
TOTAL	-	-	-	-	-	-
<u>Other European</u>						
Lead-glazed coarse earthenware						
Unglazed coarse earthenware						
TOTAL	-	-	-	-	-	-
<u>Aboriginal</u>						
St. Johns Plain	1 .143		3 .375			
St. Johns Stamped		1 .333				
San Marcos Plain						
San Marcos Stamped	3 .429				1 .333	
UID sand-tempered	3 .429		1 .125		1 .333	
UID sherd-tempered			3 .375	1 1.000		
UID sand & sherd-tempered			1 .125		1 .333	
UID shell-tempered						
discards		2 .667				
TOTAL	7 1.001	3 1.000	8 1.000	1 1.000	3 .999	-
TOTAL CERAMICS	7 1.001	3 1.000	8 1.000	1 1.000	3 .999	-
<u>NON-CERAMIC MATERIAL</u>						
<u>CULTURE</u>						
<u>Glass</u>						
clear						
<u>Iron</u>						
whole nail						
nail fragments						
flakes/lumps/fragments					+	
Bone handle fragment						
Tar						
Tabby	+					+
coquina	+	+				+
plaster						

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Table 24, cont'd. Seminole Room, Test Pit 1: Artifact Distribution (+--indicates presence)

Artifact Description	Zone 3 Level 3	Zone 3 Level 4	Zone 4 Level 1	Zone 3 Level 1 extension	Zone 4 Level 3	Zone Leve
<u>CERAMICS</u>						
<u>Hispanic</u>						
Olive Jar, unglazed				1 .100		
TOTAL	-	-	-	1 .100	-	-
<u>Other European</u>						
Lead-glazed coarse earthenware						
Unglazed coarse earthenware	1 1.000					
TOTAL	1 1.000	-	-	-	-	-
<u>Aboriginal</u>						
St. Johns Plain			2 .333	1 .100	5 .714	2 .
St. Johns Stamped		1 .125	2 .333			2 ..
San Marcos Plain				2 .200		1 .
San Marcos Stamped		2 .250		4 .400		
UID sand-tempered		1 .125				
UID sherd-tempered			2 .333		1 .143	1 .
UID sand & sherd-tempered						
UID shell-tempered					1 .143	
discards		4 .500		2 .200		
TOTAL	-	8 1.000	6 .999	9 .900	7 1.000	6 1.
TOTAL CERAMICS	1 1.000	8 1.000	6 .999	10 1.000	7 1.000	6 1.
<u>NON-CERAMIC MATERIAL</u>						
<u>CULTURE</u>						
<u>Glass</u>						
clear						
<u>Iron</u>						
whole nail						
nail fragment						
flakes/lumps/fragments				+		
Bone handle fragment				1		
Tar						
tabby	+					
coquina				+		
plaster						
mortar						



Table 24, cont'd. <sup>191</sup>Seminole Room, Test Pit 1: Artifact Distribution (+-indicates presence)

Artifact Description	Zone 4 Level 5 west ½		Zone 5		Area 7 Level 2				
<u>CERAMICS</u>									
<u>Hispanic</u>									
Olive Jar, unglazed									
TOTAL	-		-		-				
<u>Other European</u>									
Lead-glazed coarse earthenware									
unglazed coarse earthenware									
TOTAL	-		-		-				
<u>Aboriginal</u>									
St. Johns Plain	5	.833	1	1.000	2	.500			
St. Johns Stamped					2	.500			
San Marcos Plain									
San Marcos Stamped	1	.167							
UID sand-tempered									
UID sherd-tempered									
UID sand & sherd tempered									
UID shell-tempered									
TOTAL	6	1.000	1	1.000	4	1.000			
TOTAL CERAMICS	6	1.000	1	1.000	4	1.000			
<u>NON-CERAMIC MATERIAL CULTURE</u>									
<u>Glass</u>									
clear									
<u>Iron</u>									
whole nail									
nail fragment					1				
flakes/lumps/fragments									
Bone handle fragment									
<u>Tar</u>									
<u>Construction Material</u>									
tabby									
coquina	+		+		+				
mortar					+				

Artifact Description	Zone 5 Level 1	Zone 6 Level 1	Zone 6 Level 2	Zone 6 Level 3	Zone 6 Level 4	Zone Level 5
<u>CERAMICS</u>						
<u>Hispanic</u>						
Ichtucknee Blue on White						
Olive Jar, unglazed	1 .063		1 .077			
Olive Jar, glazed						1
TOTAL	1 .063	-	1 .077	-	-	1
<u>Other European</u>						
Redware						
TOTAL	-	-	-	-	-	-
<u>Aboriginal</u>						
St. Johns Plain	4 .250	8 .381	5 .385	4 .286	6 .667	2
St. Johns Stamped	3 .186	6 .286	4 .308	3 .214		
San Marcos Plain	1 .063			2 .143		1
San Marcos Stamped	2 .125	3 .143	2 .154	2 .143	3 .333	
Wakulla Check-Stamped					1 .111	
Sarasota Incised						
UID sand-tempered		4 .191		2 .143		
UID grit-tempered	1 .063					
UID sherd-tempered						
discards	4 .250		1 .077	1 .071		
TOTAL	15 .938	21 1.001	12 .923	14 1.00	10 1.000	3
TOTAL CERAMICS	16 1.000	21 1.001	13 1.001	14 1.00	10 1.000	4 1
<u>NON-CERAMIC MATERIAL</u>						
<u>CULTURE</u>						
<u>Iron</u>						
nail fragment		1				
fragment		+				
lump	+	+	+			
<u>Construction Material</u>						
tabby	+	+				
coquina		+				
mortar	+					
daub				+	+	
brick						

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Table 25, cont'd. Seminole Room, Test Pit 2: Artifact.  
Distribution (+-indicates presence)

Artifact Distribution	Feat.22 Level 3 north ½	Feat.22 Level 4	Feat.22 Level 5 north ½	Zone 7 Level 1	Zone 7 Level 4	Zone Level
<u>CERAMICS</u>						
<u>Hispanic</u>						
Ichtucknee Blue on White						1 .2
Olive Jar, unglazed		1 .167				
Olive Jar, glazed			1 .048			
TOTAL	-	1 .167	1 .048	-	-	1 .2
<u>Other European</u>						
Redware		2 .333				
TOTAL	-	2 .333	-	-	-	-
<u>Aboriginal</u>						
St. Johns Plain	2 .286	1 .167	7 .333		1 .333	1 .2
St. Johns Stamped	2 .286		6 .286			
San Marcos Plain			3 .143		1 .333	1 .2
San Marcos Stamped	3 .429	1 .167	2 .095			1 .2
Wakulla Check-Stamped						
Sarasota Incised					1 .333	
UID sand-tempered		1 .167				
UID grit-tempered						
UID sherd-tempered			2 .095			
discards						
TOTAL	7 1.001	3 .500	20 .952	-	3 .999	3 .2
TOTAL CERAMICS	7 1.001	6 1.001	21 1.000	-	3 .999	4 1.2
<u>NON-CERAMIC MATERIAL CULTURE</u>						
<u>Iron</u>						
nail fragment						
fragment						
lump	+					
<u>Construction Material</u>						
tabby						
coquina			+		+	+
mortar				+	+	
daub			+		+	
brick		+				

Table 25, cont'd. Seminole Room, Test Pit 2: Artifact Distribution (+-indicates presence)

Artifact Distribution	Area 1	Area 2 Level 1				
<u>CERAMICS</u>						
<u>Hispanic</u>						
Ichtucknee Blue on White						
Olive Jar, unglazed						
Olive Jar, glazed						
TOTAL	-	-				
<u>Other European</u>						
Redware						
TOTAL	-	-				
<u>Aboriginal</u>						
St. Johns Plain	1	1.000				
St. Johns Stamped						
San Marcos Plain						
San Marcos Stamped						
Wakulla Check-Stamped						
Sarasota Incised						
UID sand-tempered						
UID grit-tempered						
UID sherd-tempered						
discards						
TOTAL	1	1.000	-			
TOTAL CERAMICS	1	1.000	-			
<u>NON-CERAMIC MATERIAL</u>						
<u>CULTURE</u>						
<u>Iron</u>						
nail fragment						
fragment						
lump						
<u>Construction Material</u>						
tabby						
coquina	+	+				
mortar		+				
daub						
brick						

### Summary

The Castillo de San Marcos archeological project was intended to meet the needs of four problem areas; those of stabilization; the historic structures report; management and interpretation; and anthropological archeology. The needs of stabilization included information about the nature and condition of various wall footings, foundation conditions and configurations, moisture levels of sub-surface features and deposits, and the impact of ravelin stabilization upon possible sub-surface features.

Historic structure report needs included a delineation of the number, elevations, and locations of floors in various parts of the Castillo; the location of the pre-1738 floor plan and courtyard wall; historic positions of various doorways and partition walls, and the location of interior features such as wells, privies and built-in furniture.

Management and interpretive needs required information about room functions; the dates and functions of built-in furniture; information about daily activities carried out in the Fort, the diet of the soldiers and examples of material culture assemblages typical of the various periods of fort occupancy.

Concerns of anthropological archeology could also be investigated through the excavations at the Castillo, although the funding of the work was specifically for archeology in support of stabilization impact. It has been a guiding premise of the project that with little or no additional expense to the funding agency (in this case, the National Park Service) and with careful planning,

the excavations can be designed, carried out and analyzed in a manner appropriate to anthropological investigation (see preface). Areas of such anthropological investigation at the Castillo included a delineation of the nature and degree of difference or similarity between archeological patterning at the Castillo with that at non-hispanic military forts of the period; and also with hispanic domestic sites of the period. This could be of considerable interest to our understanding of the relative roles of site function and cultural affiliation in determining archeological patterns. The Castillo was also expected to provide a gauge of "hispanic-ness" within St. Augustine, since the domestic sites in the town are known to have been culturally heterogeneous and subject to considerable Indian acculturation. Changes in the patterns of occupation and fort use from Spanish to British occupation were also expected to be revealed at the Castillo.

The stabilization, historic structure, and management needs are addressed in this report, while those of anthropological interest may be found in Williams (n.d.).

In all areas, the sub-grade conditions both inside and outside the fort were found to be stable and not seriously deteriorated. Specific information about masonry conditions, deterioration and suggested courses of action should be found in the architectural report. Moisture samples were taken and processed from each excavation unit, and the results of these tests can be found in Appendix 2. Illustrations and discussion of specific sub-grade walls and features may be found in the appropriate section in this report. A summary of the historic structure and management



data will follow, organized by the areas excavated. It should be noted that the archeological investigation, analyses and interpretations were carried out prior to the completion of the historical data section, and thus some conclusions may be altered or refined when that is available.

#### South Covered Way

Information about the construction of the south covered way; its wall, and the construction of the counterscarp and glacis were recovered here, in addition to a determination of the floodlight conduit conditions and the wall's sub-grade conditions.

At about 2.80 MMSL, an aboriginal midden layer was located in the south covered way. This was present at that elevation throughout the entire Castillo, and represents a pre-Castillo component. It is entirely prehistoric (Vernon 1979). The first historic activity in the area was the filling of the south covered way in the late 17th century. Approximately 55 cm. of earth were placed in the area, and the south covered way wall and the counterscarp wall were constructed. At that time, the covered way wall was one meter below its present height, and the counterscarp wall was 1.8 meters below its present height.

In 1762 (Arana and Manucy 1977) another meter of fill was added to the south covered way; the covered way wall and counterscarp wall were brought to their present height; and the glacis was filled to its approximate present configuration. All of the deposits dating to the colonial period are secondary fill. (The aboriginal midden, however, does not appear to have been relocated). The contents of this fill are statistically very similar to the

assemblage of early historic period aboriginal assemblages in the vicinity, suggesting that a nearby historic period aboriginal village may have been the source of the south covered way fill (Vernon 1979).

The final archeologically documented activity in the south covered way was the presence and burning of a wooden structure during the second half of the 19th century. This is believed to have been the house of Sergeant Brown, known to have been present near the excavation location.

### Ravelin

Excavations in the ravelin revealed the conditions of sub-grade walls, the location and configuration of the original entry stairs, information about the powder magazine built there in the First Spanish Period; and the subsequent demise of that structure.

Excavation on the west side of the entrance stairs to the ravelin located the earlier wall base and the top step of the colonial period entrance. This was a mirror image configuration to that present today on the east side of the stairs. The top step and the wall base were present at 6 cm. below the 1979 excavation grade (3.97 MMSL). Adjacent to this wall base, clean white beach sand fill (apparently the original ravelin fill) appeared at 3.38 MMSL (65 cm. below the 1979 grade). The present wall configuration in the west section of the ravelin was apparently established during the Second Spanish Period, when considerable other renovation activity took place in the area.

The change in the stair and wall configuration was associated with the rebuilding of the east wall of the west portion of the

ravelin (the wall between the ravelin and the drawbridge , to the west of the present entrance). That wall served as the east wall of the powder magazine, built in the ravelin during the First Spanish Period. The powder magazine's north wall was the present north wall of the ravelin's west section. The south wall of the powder magazine was located at 3.5 meters south of that north wall, and was one meter thick. The roof of the magazine was vaulted, with the vault supported by a wooden sub-structure. A post mold cut into the south powder magazine wall appears to have been associated with the vault support at the south end of the magazine; and the inner cordon or ledge of the north wall appears to have served as the north vault substructure support (the cordon and postmold are at the same elevation). The powder magazine floor was of tabby resting on sterile white beach sand at 1.30 meters below the juncture of the south wall's top and the roof vault. Resting directly upon the floor was a layer of burnt organic material and artifacts, apparently representing the collapse and burning of the wooden vault substructure. This event occurred (based on artifact TPqs) during the British period of occupation. It is likely that the east wall of the magazine also collapsed at that time, down to a level which was 45 cm. above the magazine floor (above this level the wall is composed of irregular blocks, rubble and dirt-filled voids). After the collapse of the vault and east wall during the British Period, 45 cm. of fill were placed in the magazine up to the top of the remaining east wall. The wall was then poorly rebuilt, and the fill brought up to the 1979 grade, during the Second Spanish Period. The stairway con-

figuration was changed at that time also.

Subsequent to the Second Spanish Period, considerable settling of the earth fill in the powder magazine occurred, causing serious slope problems to the north end of the magazine, with impact to the north wall through water drainage. At the time of this report, a large amount of fill and sod have been added to the ravelin area, alleviating that problem.

The deposits from the ravelin excavations, although secondary, were among the most interesting at the Castillo. The area apparently served as either a convenient trash repository during both the British and Second Spanish Periods; or a nearby trash deposit contemporary with the filling events was used to fill the magazine. The archeologically derived dates for the deposits are so close to the documentarily known activities in the area, that it appears probable that the deposits are the result of British and Second Spanish Period activity associated with the Castillo. Unfortunately, more specific identification of the deposits is not possible.

#### The Water Battery

The water battery on the east side of the Castillo was investigated to learn about the sub-grade foundation conditions and configuration of the east curtain; the sub-grade conditions of the shot furnace; evidence for activities believed to have taken place in the area after the moat was filled; and information about the sub-grade conditions of the seawall on the fort's east side. The first two objectives were met; and the latter two - through absence of expected evidence in the excavation units for the former; and time and water logistical problems in the latter - were not.

Three grade surfaces were located in the water battery. The earliest was the First Spanish Period moat surface, a 30 cm. thick layer of black, artifact bearing muck. All materials dated exclusively within the First Spanish Period. Above this was a 65 cm. deposit dating to post-1790 and representing the filling-in of the moat in 1844. This grade was maintained until the 20th century Park Service period, when 30 more centimeters of fill and sod were added. No evidence for such suspected activity in the area as stables was present in the excavation unit.

The east scarp itself rests upon two stepped, coquina ledges (or toes). The upper ledge is 30 cm. wide and 25 cm. deep. It rests on a lower ledge, 45 cm. wide and 40 cm. deep. These constitute the fort's foundation system, which is thus 65 cm. in depth from the base of the curtain itself. They rest in sterile, sub-water table sand, and apparently function as an absorbent coquina pad upon which the fort rests. This foundation data, as well as the moat elevation data, are completely consistent with Manucy's (1940) and Borrenson's (1941) investigation results on the other sides of the Castillo.

The shot furnace also rests on a coquina toe, which is 20 cm. thick. A second toe, also 20 cm. thick and extending 30 cm. out from the first toe, is believed to have been present; however it is now deteriorated and crumbled. Underlying both the solid and deteriorated toe sections is a 10 cm. thick layer of packed shell. This rested upon the 19th century fill deposit discussed above.

#### Interior Excavations - Latrines

Excavations in the two small rooms beneath the courtyard ramp,



the "necessarias", provided information about the sub-grade conditions of the ramp walls, the grade sequence in the courtyard, the nature and evolution of sanitary systems at the Castillo, and the pre-Castillo component.

The dark earth midden noted in the discussion of the south covered way was present in the latrines, at a consistent elevation (2.77 MMSL) with the same deposit in the south covered way (2.80 MMSL), Winters' excavation in the glacis (2.70 MMSL) and Harrington et al's (1952) courtyard excavations (2.60 MMSL). Evidence for the earliest historic period activity in the area is a tabby floor (Floor 3) which rests directly upon the midden layer. At the period represented by Floor 3 (which is the 1730's renovation) there was a coquina banquette along the south walls of both latrines, each containing three privy holes. The ledge itself was at that time 45 cm. lower than its present height. This banquette of coursed blocks was retained through the First Spanish Period.

During the British Period of occupation, the privies were renovated. A plastered coquina slab of 45 cm. in height was placed over the Spanish privy holes, raising the banquette to its present height. A layer of earth was added and another tabby floor laid 25 cm. above the earlier one. Additionally, a rectangular coquina block structure was placed in the center of the privy, floored in tabby and functioning apparently as a urinal. A hole was cut into the north wall of the west latrine, near the west end, just above the British floor elevation. This probably functioned as an opening to the courtyard through which water could be sloshed to rinse out the urinal into an underground drain pipe



(shown on the Roque map of 1785). This configuration was established after 1764 and prior to 1785, strongly suggesting a British affiliation. It was used until well into the American period of occupation at the Castillo, with reflooring both inside and outside the urinal occurring after 1850. From then until about 1880, the urinal stood about 15 cm. above the floor. After 1880, the urinal and floor were covered with earth and shell fill, the wall between the privies was added and they assumed their present configuration.

One unit was placed on the exterior of the west latrine, in the courtyard. This excavation revealed the sub-grade configuration of the ramp's north wall. The aboriginal midden layer was present at 2.74 MMSL, with a tabby floor resting directly upon it. This floor (2.80 MMSL) is the earliest historic deposit in that part of the courtyard. A layer of fill deposit with a sherd of annular pearlware (post-1795) was above the early floor, capped by a 20 cm. thick tabby floor. This floor was within one centimeter of the similar floor located by Harrington et al in the courtyard, and was constructed in three pours. It is most likely a second Spanish period renovation. Above the second Spanish period floor was modern fill and the present courtyard surface.

After the establishment of the Second Spanish Period pavement, and before the present surface was added (1930's) a large pit was excavated along the north ramp wall to make repairs to that wall. The repairs, believed to have been made in 1885, are represented by alternating courses of grey cement and coquina rubble, from the top of the pit to the base of the wall. The

circular hole in the privy wall was also filled at this time.

Deposits in the latrine excavations were lacking in significant amounts of cultural material, and were, for the most part, secondary deposits primarily useful only for dating purposes.

#### The Seminole Room Excavations

Excavation in the Seminole room provided information relevant to original fort construction, the 1750's renovation, and Second Spanish Period additions. Information about the sub-grade condition of the room's walls was also recovered.

The aboriginal midden layer noted throughout the Castillo was also present in the Seminole room, although at a somewhat higher elevation (2.87 MMSL). In this room, the top of the midden apparently was the ground surface from which the 1675 defense configuration's moat was excavated. The major deposits in the room were in fact, the fill from this 1675 moat and the edge of its associated earthwork (which comprised the west side of the unfinished Castillo until 1685). Since only the edge of the moat's east-west jog was excavated (Test Pit 1), and since Test Pit 2 was suspended before reaching the base of moat fill, the ten foot depth indicated documentarily for the moat cannot be confirmed. The excavations, however, did confirm the essential accuracy of the 1675 Salazar map.

Following the in-filling of the moat, the courtyard wall of the west bank of rooms was constructed at five meters west of the room's present courtyard wall. It was .8 meters thick, and extended in depth for 1.11 meters (from a top elevation of 3.35 MMSL). Most of the feature as excavated was below grade during its use. At this time also the pre-1756 courtyard surface was located at

between 3.21 and 3.13 MMSL. No floor was evident to the east of the courtyard wall, in what would have been the room interior.

During the 1730's-50's renovation, the old courtyard wall and the casemate dividing walls were removed. The present east (courtyard) wall was built, and the entire room floored in tabby and crushed coquina. The room's north wall was rebuilt with a spread footing, using fabric which was probably from the previous walls of the pre-1750's room.

After 1756, the banquette presently in the west end of the Seminole room was constructed, and was in use for at least part of the time during which the 1750's renovation floor was in use. A layer of earth was added above that floor (and adjacent to the banquette) after 1785; and another very compact, fine shell aggregate tabby floor was poured. This floor was patched in a number of places with grey concrete, and is in use in the room today. It probably dates to the Second Spanish Period. The sealed doorway evident in the room's north wall was opened, used and sealed during the lifespan of the present floor. The sub-grade juncture of the Seminole room's north wall suggests that the east wall (which also constitutes the west wall of the south bank of rooms) was in place prior to the construction of the north wall.

Very little artifactual material was present in the Seminole room deposits, and all was secondary fill material useful primarily for dating.

#### Sequence of Activities

The restrictions upon archeological sampling strategy at the Castillo as well as the limited excavations preclude a complete

discussion of the sequence of activity at the fort. This section is, rather, intended to organize the information that was recovered by the temporal divisions which are apparent from archeological data. The historical data sections will undoubtedly expand these observations considerably.

#### Aboriginal Component

This component, noted in all areas of the Castillo (except the Ravelin and water battery where it was certainly removed during construction), was an Indian midden dating to the St. Johns IIb period (ca. A.D. 1100-1500) (Vernon 1979). The component contained both sheet deposits and some discrete pit features. There is no evidence that the village represented at the Castillo was occupied at any time during the historic period. It was, however, a large village with trading ties to west Florida and the Georgia coast. Substantial amounts of faunal remains were recovered, indicating heavy subsistence reliance on fish and other wild species found in nearby estuarine habitats.

#### Initial Fort Construction

Deposits associated with initial fort construction were excavated in the Seminole room, the south covered way, the courtyard and the ravelin. The lower 55 cm. of earth and the lower - m. of the counterscarp and south covered way walls were placed in the south covered way at this time. The fill was brought from a pre-historic Timucua Indian village deposit, quite possibly associated with that upon which the Castillo rests. The earliest construction in the ravelin is represented by the sterile white beach sand deposit which is apparently the original fill material. The water

battery yielded information about the original scarp foundation construction and also about the depth of the initial moat.

The Seminole Room provided some of the most interesting information about the early construction work at the Castillo, since it was in the location of the unfinished west side of the Fort. Evidence for the earthwork and moat protecting the west side until 1675 was present, and the original courtyard wall and surface were located. The casemate floor is suggested as having been wood or earth. The casemate dividing wall of that period, however, was removed during the 1730's renovation. The elevation of the lowest surface in the courtyard - floored in tabby - was consistent with that in the Seminole room.

The excavations by Harrington et al in the courtyard also provided information relevant to this original construction phase. Those tests revealed the locations and configurations of the bank of rooms (Governor's house, powder magazine, storerooms) that were present in the courtyard center, prior to the 1730's renovations.

#### First Spanish Period Changes

Evidence relating to the "big change" discussed by Arana and Manucy (1977) was found in several areas. The Seminole room revealed the nature of construction of the courtyard's post 1730 west wall and the west bank of the room's dividing walls. These were apparently constructed at least partially of the fabric of previous walls, and they rest upon a spread footing base which extended deeper than excavation was permitted. A new tabby floor was poured over the top of the previous courtyard wall. This

floor was consistent in elevation with that in the latrines, which were established during the 1730's renovations, and which at that time, were a single room containing a six-hole privy. The buildings documented by Harrington et al were removed during the renovation. The banquette in the Seminole room was constructed at some time after the 1756 renovation, most likely during the first Spanish period.

Other changes took place during the 1760's when an attempt was made to strengthen the outer defenses. The powder magazine in the ravelin was built at this time, and one meter of fill were added to the south covered way. One meter of wall was also added to the south covered way wall and the counterscarp wall in the south covered way. The glacis was also built during this period.

#### British Period (1764-1783)

Events during the British period are clearly evident only in the latrines and the ravelin. The privies of the first Spanish period were capped, the area refloored, and the rectangular trough-urinal arrangement added. In the ravelin, the powder magazine collapsed and burned, and 45 cm. of fill were placed in the collapsed structure.

#### Second Spanish Period (1783-1821)

Reflooring of most interior areas excavated, including a major courtyard resurfacing, took place during the second Spanish period. The door between the Seminole room and the casemate to the north was also constructed during this time. The privy confi-



duration of the British period continued in use. Considerable change occurred in the ravelin during the second Spanish period, including reconstruction of the east wall of the collapsed powder magazine, filling of the powder magazine area to its approximate 1979 grade; and rebuilding of the stairway entrance to conform to its present configuration.

#### American Period (1821-1935)

Major changes in the water battery occurred during the American period, when the moat was cleared out, filled in, and the grade brought up to form the water battery. The shot furnace was added in the area after 1840.

The only archeologically evident activity of this period in the south covered way is the presence of the quartermaster's house, which burned in the second half of the 19th century. No archeological evidence of American period activity was found in the ravelin.

The interior of the Castillo was subjected to various repairs during this time, marked by a characteristic dark grey cement-like mortar. This is apparent in the sub-grade north wall of the ramp, which was repaired in the late 19th century. The hole in the west privy wall was also filled at that time, marking the cessation of use of that room as a privy. The second Spanish period courtyard floor and Seminole room floor continued in use during the American period, and the doorway connecting the Seminole room and the casemate to the north was filled in.

Park Service Period (1925-present)

Alterations relevant to the archeological record which were evident from the 1979 excavations include adding of the present courtyard surface and interior floors of the privy; adding sod to the water battery and south covered way, and the addition of nearly a meter of fill and sod in the ravelin. Additionally, the entire south side of the east privy was impacted by the network of pipes and electrical conduits placed there to service the power room and the present restrooms. Floodlight conduits were also placed below grade in the south covered way and water battery, impacting only the upper 30 cm. of deposit. Other changes and the archeological data associated with them are documented in Manucy (1939, 1940, 1953, 1960), Borrenson (1941), and Winter (1937), as well as in the historical data sections of this project.

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APPENDIX 1

Colonial Period Maps of the Castillo

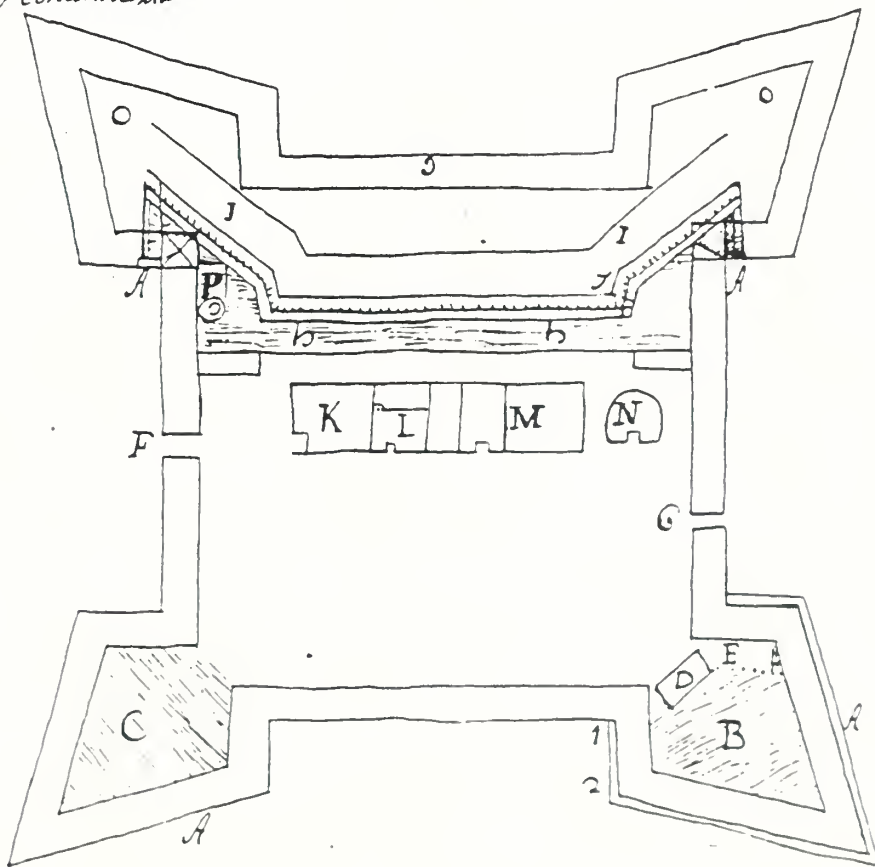


Con las defensas hechas por Don Pablo de Vitay Salazar Por<sup>o</sup> y Cap<sup>o</sup> Gen<sup>l</sup> de la  
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 C. Cauallero de alto de 2<sup>o</sup> pies  
 templado y con artilleria =

D. Bodega hecha p<sup>a</sup> Polvora  
 E. Otra bodega que se hace  
 F. Puerta principal del Castillo  
 G. Puerta del socorro =  
 H. Cortina que se ha hecho con  
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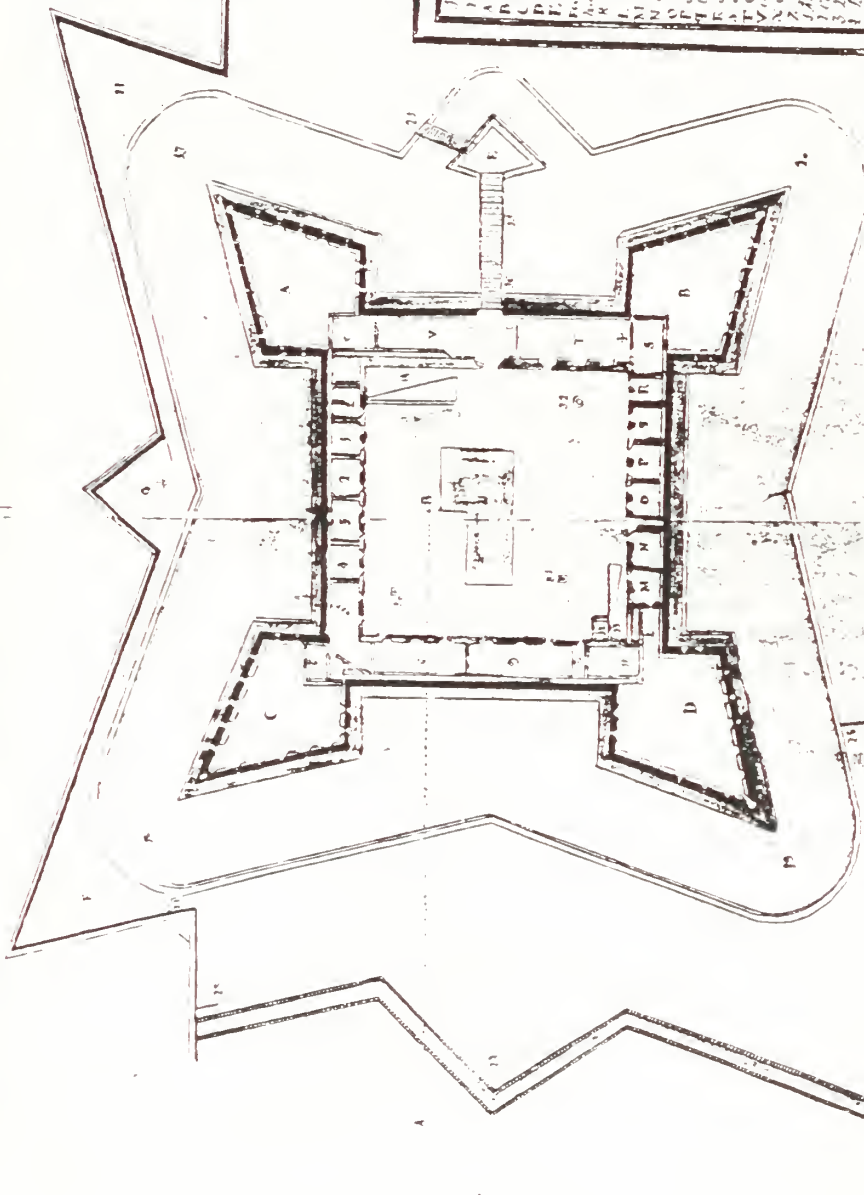
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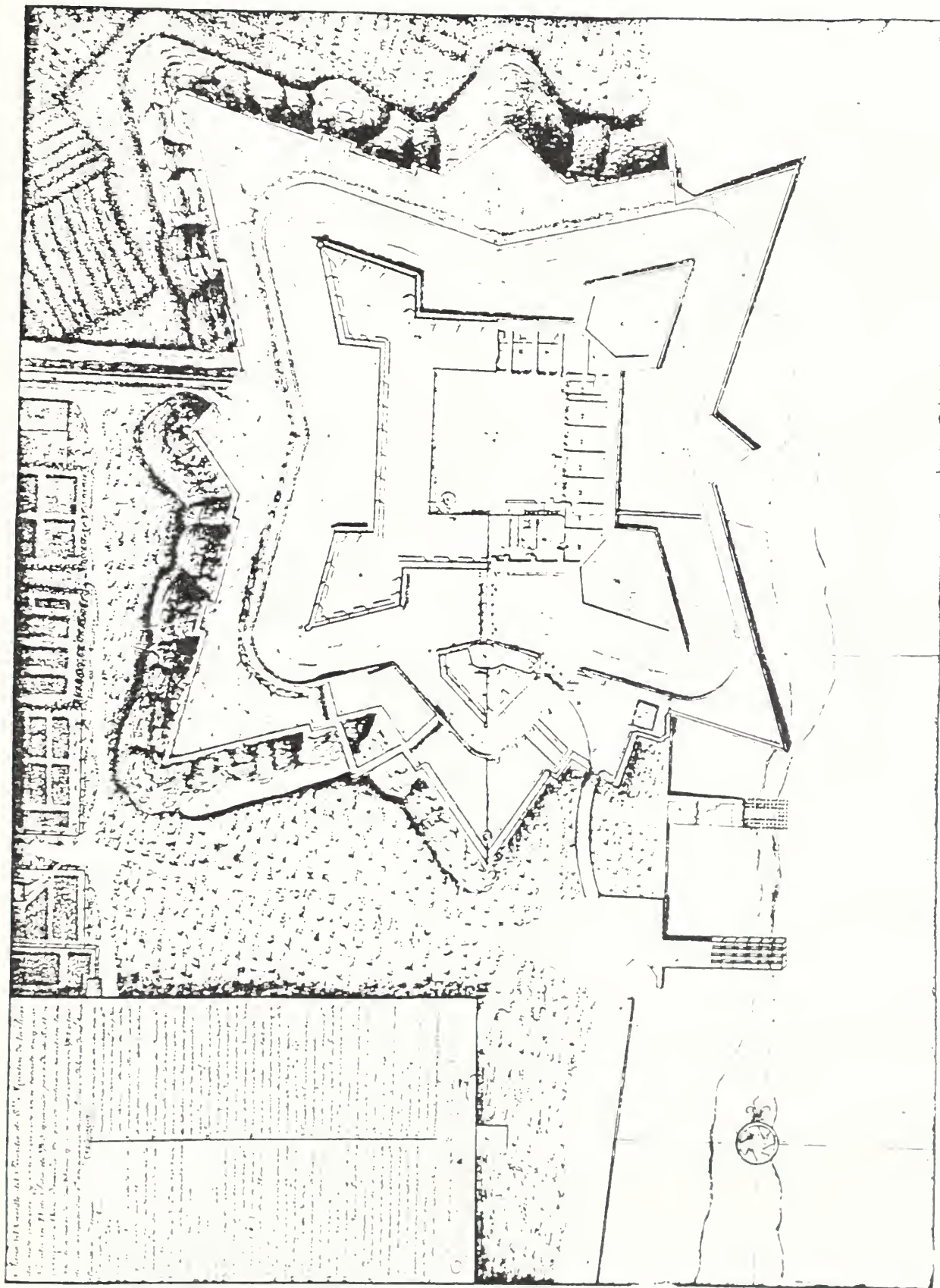
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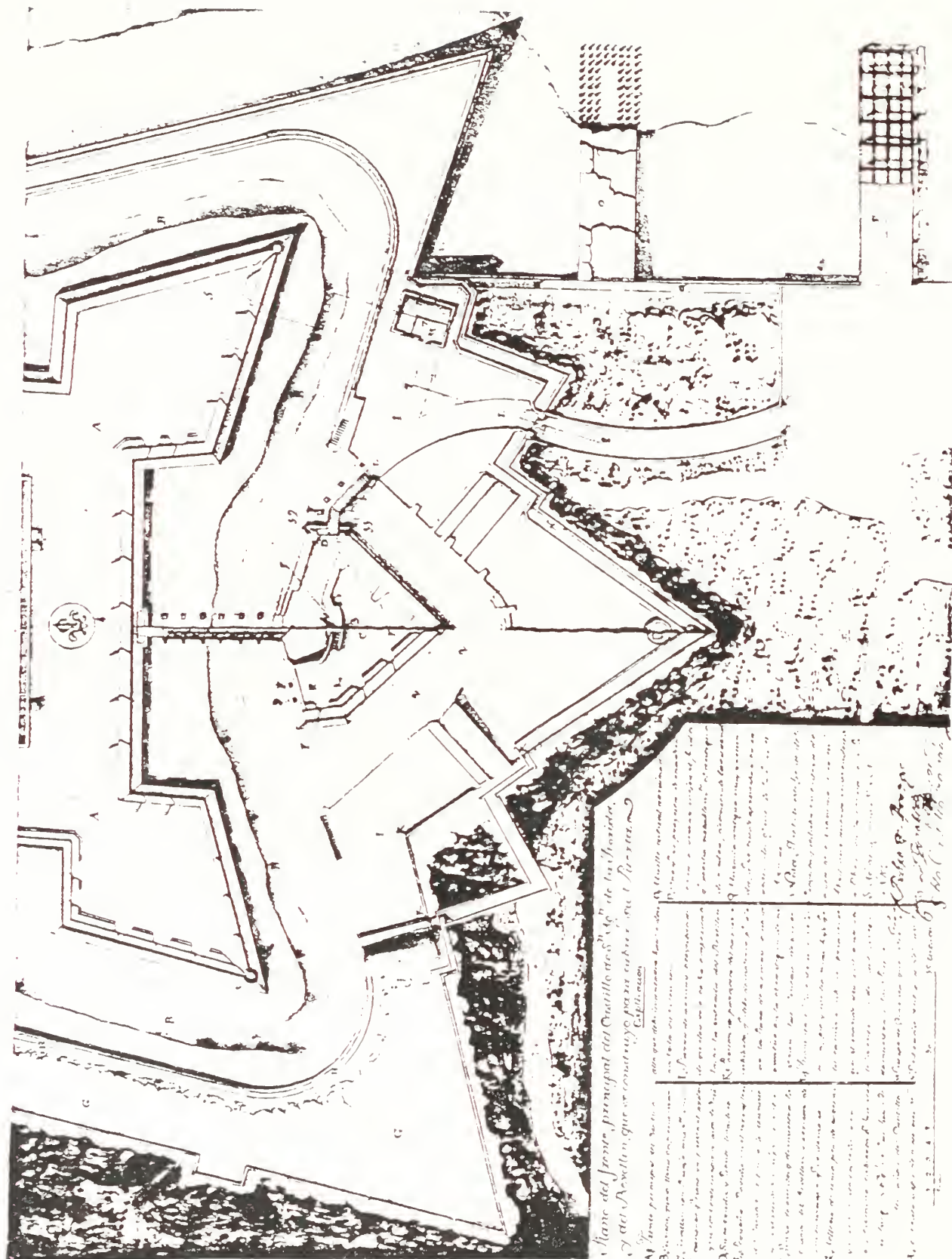


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 98. Puerta de la fortaleza.  
 99. Puerta de la ciudad.  
 100. Puerta de la fortaleza.

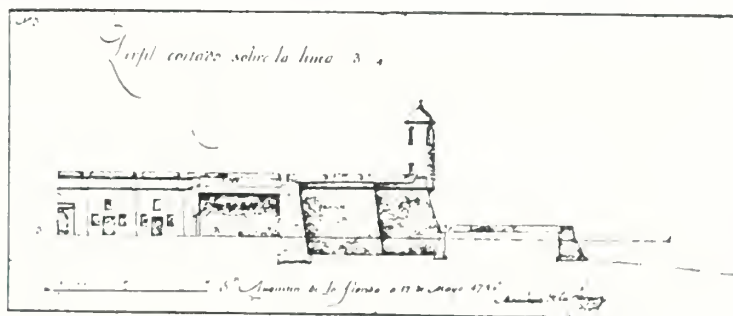
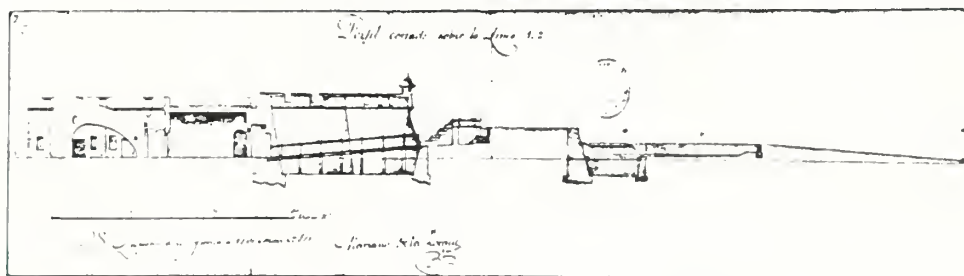
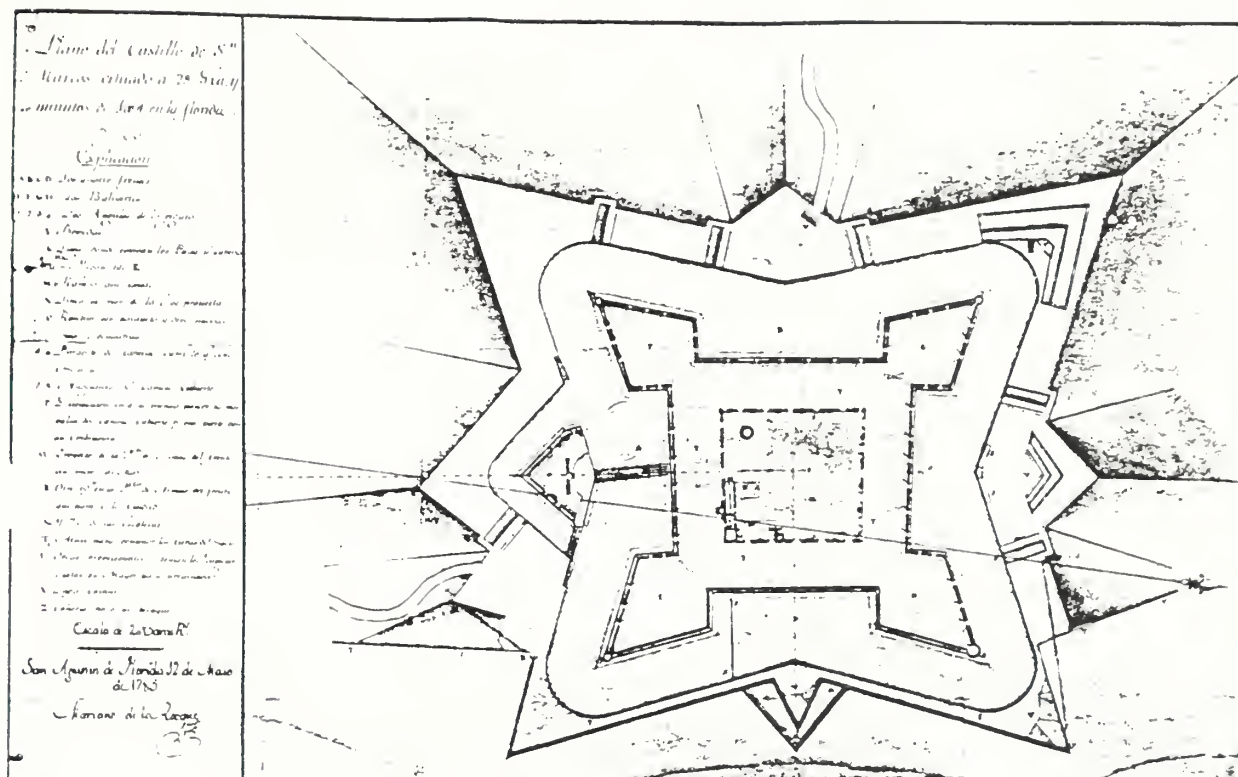


Nun. 69. — Plano del Castillo de S. Agustín de la Finca visto interior y exteriormente en el estado actual.

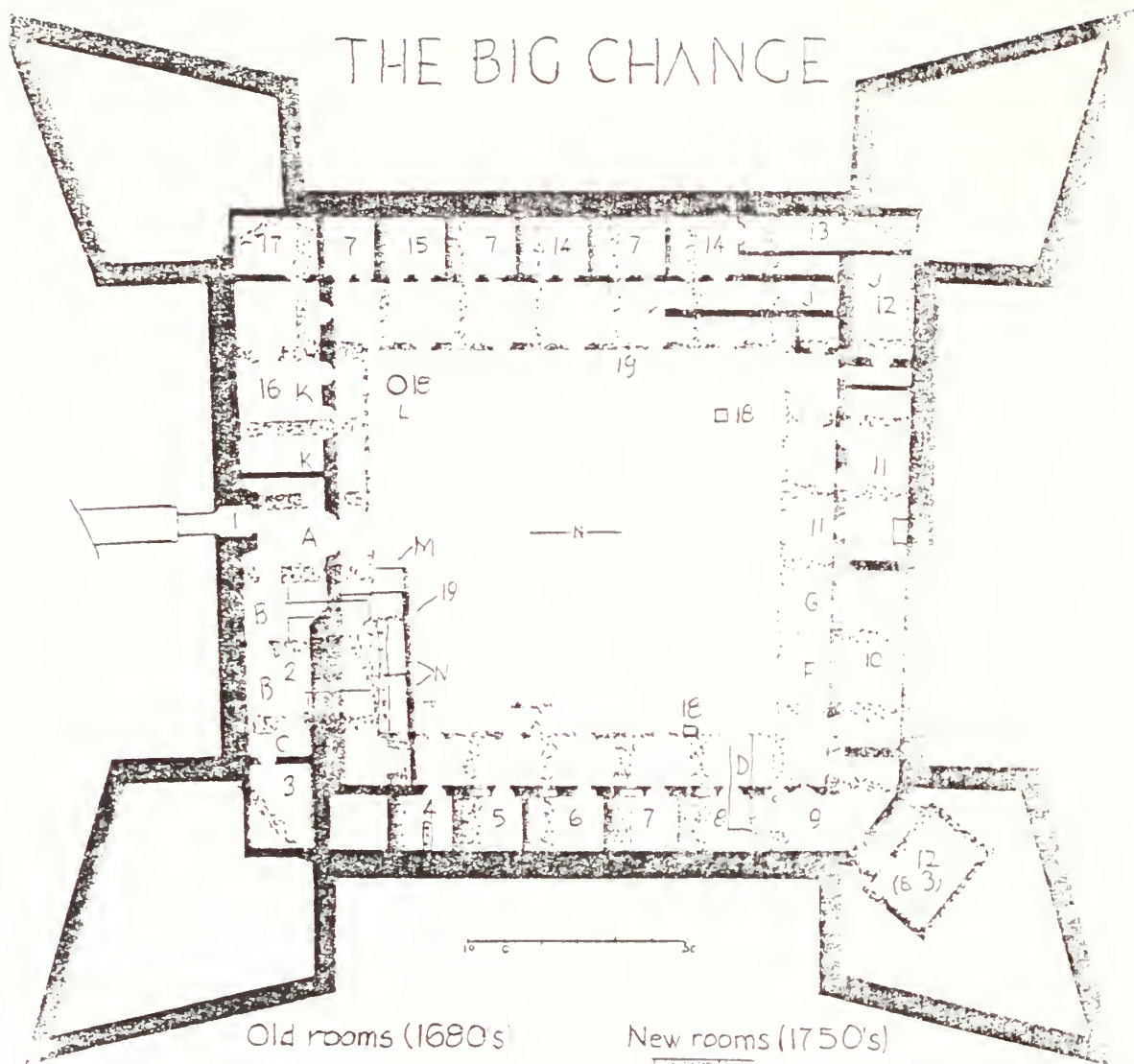




Non. 70. "Plano de frente principal del castillo de S. Agustín de la Florida y del Kevelin que se construye para cubrir su Puerta", por D. Pedro de Brozas y Garay y D. Pablo Castello - Año 1763 - Servicio Geográfico del Ejército



Num. 73 — Plano del Castillo de S.<sup>o</sup> Marcos situado a 29 Gr<sup>o</sup> y 40 minutos de latitud en la Florida del Este, por D. Mariano de la Rocque. — Año 1785 — Servicio Historico Militar.



Key: 1—sally port 2—guardrooms 3—prison 4—latrine 5—smithy 6—overseer 7—provision kitchen 8—ordnance supplies 9—magazine 10—ration distribution 11—subsistence supplies from New Spain 12—treasure 13—ship supplies 14—arms 15—commandant quarters 16—chapel 17—secretary 18—treasurer's quarters 19—accountant's quarters 20—chapel 21—magazines 22—officers' quarters 23—well 24—latrines Others storerooms

## APPENDIX 1: Map 6

"The Big Change" after  
Arana and Manucy p. 45



PROVENIENCE	WEIGHT BEFORE BAKING	WEIGHT AFTER BAKING	Net Weight of Moisture	Percent of Moisture in Sample
South Covered Way Trench 1 Section A				
a. 1.47 MBD	32.4 grams	30.9 g	1.5 g	4%
c. 1.67 MBD	37.3 g	36.2 g	1.1 g	2.9%
e. 1.87 MBD	36.4 g	33.9 g	2.5 g	6.8%
d. 2.07 MBD	34.5 g	32.8 g	1.7 g	4.9%
f. 2.27 MBD	31.2 g	29.9 g	1.3 g	4.2%
f. 2.47 MBD	31.4 g	29.6 g	1.8 g	5.7%
g. 2.67 MBD	32.9 g	31.2 g	1.7 g	5.7%
h. 2.87 MBD	31.9 g	29.7 g	2.2 g	6.9%
i. 3.07 MBD	38.0 g	35.7 g	2.3 g	6.0%
South Covered Way Trench 2 Section A				
a. 1.01 MBD	22.0 g	21.4 g	1.9 g	8.6%
b. 2.01 MBD	22.8 g	21.8 g	1.0 g	4.4%
c. 2.21 MBD	20.9 g	19.8 g	1.9 g	9.1%
d. 2.41 MBD	24.5 g	23.0 g	1.5 g	6.1%
e. 2.61 MBD	21.2 g	20.1 g	1.1 g	5.2%
f. 2.81 MBD	21.7 g	20.9 g	.8 g	3.6%
g. 3.01 MBD	20.4 g	19.6 g	.8 g	3.9%
h. 3.21 MBD	19.9 g	18.4 g	.5 g	2.5%
Clasis Trench 3 Section A				
a. .27 MBD	19.1 g	17.7 g	1.4 g	2.3%
b. .47 MBD	22.9 g	22.3 g	.6 g	2.6%
c. .67 MBD	29.0 g	28.0 g	1.0g	3.4%
d. .87 MBD	24.4 g	23.7 g	.7 g	2.8%
e. 1.07 MBD	31.8 g	30.7 g	1.1 g	3.4%
f. 1.27 MBD	26.5 g	25.3 g	1.2 g	4.5%
g. 1.47 MBD	30.1 g	29.5 g	.6 g	2.0%
h. 1.67 MBD	26.5 g	25.3 g	1.2 g	4.5%
i. 1.87 MBD	24.4 g	23.5 g	.9 g	3.7%

## CASA-1979 Excavations-Soil Moisture Sample Results

PROVENIENCE	WEIGHT BEFORE BAKING	WEIGHT AFTER BAKING	NET WEIGHT OF MOISTURE	PERCENT OF MOISTURE IN SAMPLE
Water Battery Trench 4 Section A				
a. 1.41 MB	29.6 grams	26.4 g	3.2 g	10.8%
b. 1.61 MB	34.9 g	30.8 g	4.1 g	11.1%
c. 1.81 MB	31.0 g	28.6 g	2.4 g	7.6
d. 2.01 MB	43.7 g	38.3 g	5.4 g	12.3
e. 2.21 MB	55.0 g	43.8 g	11.2 g	20.0
f. 2.41 MB	41.1 g	36.2 g	4.9 g	11.9
g. 2.61 MB	40.2 g	32.3 g	7.9 g	19.6
West Latrine Test Pit 1				
a. 1.26 MB	21.5 g	18.7 g	2.8 g	13.02
b. 1.46 MB	20.6 g	15.8 g	4.8 g	23.0
c. 1.66 MB	20.4 g	15.3 g	5.1 g	25.0
d. 1.86 MB	32.5 g	30.0 g	2.5 g	7.2
e. 2.06 MB	30.9 g	29.3 g	1.6 g	5.4
f. 2.26 MB	28.3 g	26.7 g	1.6 g	5.6
g. 2.46 MB	36.6 g	33.0 g	3.6 g	9.0
h. 2.66 MB	37.8 g	30.8 g	7.0 g	18.5
Seminole Room Test Pit 1				
a. 1.20 MB	49.6 g	47.3 g	2.3 g	4.6%
b. 1.40 MB	42.8 g	39.0 g	3.8 g	8.1
c. 1.60 MB	38.3 g	36.3 g	2.0 g	5.2
d. 1.80 MB	41.8 g	38.3 g	3.5 g	8.3
e. 2.00 MB	45.0 g	41.6 g	3.4 g	7.5
f. 2.20 MB	46.8 g	42.9 g	3.9 g	8.3
g. 2.40 MB	56.8 g	42.6 g	14.2 g	25.0

MB: Meters Below Datum  
MS: Meters Below Surface

November 29, 1979

APPENDIX 3

FAUNAL REMAINS FROM THE CASTILLO DE SAN MARCOS,  
ST. AUGUSTINE, FLORIDA

by

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DECEMBER 15, 1980

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FAUNAL REMAINS FROM THE CASTILLO DE SAN MARCOS,  
ST. AUGUSTINE, FLORIDA

I. ABSTRACT

This paper provides a comparison of faunal remains from two proveniences excavated by Dr. Kathleen A. Deagan (Florida State University) within the fortress Castillo de San Marcos, St. Augustine, Florida. Proveniences chosen were the Ravelin (Tests 1 and 2 of 3 tests) and the West Latrine. Both proveniences contain British and Second Spanish Period materials (spanning a period from circa 1763 to 1820). Additionally, material from the West Latrine test is largely drawn from an aboriginal feature intersected during excavation. These proveniences allow a comparison of aboriginal availability contrasted with European subsistence practices. The results of this study indicate the importance of imported domesticates, particularly cattle and pig, to garrison subsistence. The Ravelin assemblages indicate an unusually abundant use of European domesticates.

II. INTRODUCTION

The fortress Castillo de San Marcos occupies an extensive bluff overlooking the confluence of the Tolomato and Matanzas Rivers (Intracoastal Waterway) and the north end of Anastasia Island. As the structure now appears, it has been extensively modified. Initially, a large Timucua communal house made available to the Spanish was secured by raising encircling earthworks. A series of earth and wood structures succeeded the Timucua house. The first permanent stone structure was built over a century later, in 1672 (Harrington, et al.: 1956).

Two structural portions of the site, the Ravelin and the West Latrine, are the proveniences of the faunal remains to be considered here. The Ravelin, a structure designed to protect the drawbridge access over the moat, was built after 1680. Plan 1680, included in Harrington, et al. (1956: 106) does not indicate the Ravelin. This structure may have been added during the refurbishment and enlargement of 1738-39. Similarly, no absolute date is known for the building or modification of the West Latrine. However, in relative terms, both must



antedate the materials which fill them. Therefore, a terminus post quem of ca. 1763 for the Ravelin can be ascribed. A terminus post quem of ca. 1780 can be ascribed to the West Latrine.

The physical location of the Castillo de San Marcos is ecotonal. Several biotopes are present within minutes by boat or a matter of hours by foot. Beach-dune, salt marsh, tidal river, maritime forest, and freshwater swamps represent easily exploitable local environments. Because the fortress was built in an area previously occupied by a Timucua village, the European-derived structure overlies and intrudes into earlier aboriginal deposits. This fortunate situation allows a measure of aboriginal availability of local fauna. A comparison of aboriginal and European subsistence patterns may be made.

The faunal remains upon which this study is based were recovered during the Spring 1979 excavations directed by Dr. Kathleen A. Deagan of Florida State University. Excavations were conducted as part of the annual field schools using student excavators. All materials were screened through  $\frac{1}{4}$ -inch hardware cloth using water separation. Ravelin excavation units represent approximately 10.5 cubic meters of fill. The West Latrine tests represent approximately 3 cubic meters of fill.

### III. THE FAUNAL ASSEMBLAGE

The West Latrine faunal assemblage appears to be consistent with a basal aboriginal midden deposit overlain and mixed with a very small amount of European-derived fauna. This can be seen on the tables appended. Tables I through III present the results of faunal identification for the West Latrine, Test 1 of the Ravelin, and Test 2 of the Ravelin, respectively. The temporal affiliations of these proveniences are summarized in Table IV. Table V lists information on the West Latrine features and includes a diagram illustrating the horizontal appearance

of the test area. Table VI is a composite of the two areas indicating Minimum Number of Individuals (MNI), number of identified fragments, weights, and biomass calculations. The degree of admixture in the West Latrine area appears low: note one identifiable Sus scrofa fragment and 2 Bos taurus fragments. Additionally, there is a relatively low number of fragments which are identifiable as large mammal or mammal. Overall, the number of fragments assignable to mammals is low while the number attributable to fishes is quite high in comparison. Turtles have a higher representation in the West Latrine materials than in either Ravelin provenience.

The food procurement system observed for the West Latrine assemblage is typically aboriginal with considerable exploitation of estuarine fishes and invertebrates. Additionally, foraging activities are indicated by the presence of turtles. This assemblage is consistent with what is known of the Timucua at the European contact: a sedentary village existence with corn agriculture augmented by hunting, fishing, and gathering.

The Ravelin presents quite a different faunal assemblage. It can be noted at once that mammalian faunal usage increases markedly. Table VI illustrates the shift to domesticated fauna and the reduction in use of locally available resources. The biomass calculations shown in Table VI also supports the disparity. Table VII summarizes biomass and percentage of biomass for each class of vertebrates. In the West Latrine, fish comprise 65.24% of the biomass and mammals 23.84%. However, both Ravelin proveniences evidence a heavy dependence on mammals: Test 1 has 92.35% mammalian remains, Test 2 has 95.85%. In the Ravelin assemblage, fishes have fallen to 6.21% and 3.21% (Test 1 and 2, respectively). Turtles are represented by 9.46% of the West Latrine biomass. Turtle biomass drops to less than 1% in both Ravelin proveniences. Those fish which were utilized are estuarine available species, the same species available to the aboriginal inhabitants. However, these species are never taken in the same number or same diversity as during aboriginal times.

Why such a food use pattern existed is the pertinent question. Several points should be considered at this juncture. First, the Ravelin fill from which this sample is derived may present a very biased picture of the overall food use pattern of the garrison. Differential refuse disposal practices are one possible mitigating factor. Secondly, the Ravelin fill faunal assemblages may indicate a real domesticate dependence reflecting cultural or rank preferences. The Ravelin could reflect a more domesticate-dependent supply of food during the latter years of the British and Spanish dominions when aboriginal depopulation reduced exchanges between garrison and local aboriginal population. Each point should be developed further.

#### A. SAMPLE BIAS

Just how the Ravelin came to be filled and from what areas of the fort vicinity the fill was taken presents an inherent interpretive problem. A faunal interpretation is severely constrained by the integrity of the sample under consideration. Depositional activities at the fort are not yet clearly defined and are still in an analytical stage. For the sake of conjecture, this mitigating factor (sample bias from depositional activities) will be set aside. The present assumption will be that sample bias does not exist and that these assemblages represent, realistically, the food practices during the British and Second Spanish Periods. When more is known of the depositional nature of the Ravelin area, the integrity of this sample can be better judged.

#### B. CULTURAL PREFERENCES

It is unfortunate that floral materials indicating the amounts and varieties of vegetable materials included in the garrison diet are so poorly known. Resultantly, the study of diet, in terms of vegetable remains, makes difficult an actual grasp of the British-Spanish diet. Deagan (1974:151) for example, hypothesizes

that mestizo households should show a broader usage of local resources. Acculturative preferences would be expected to utilize elements of both dietary patterns. Reitz (1979) observes that status was probably a principal factor in shaping dietary practices in St. Augustine. However, she cautions that no single adaptive pattern was employed at one time or by one status group of people. Military garrisons, usually tightly stratified by rank, may reflect rank differences in access to particular cuts of meat, abundant provisions, or species of food animals.

### C. PROVISIONING PRACTICES

In other frontier situations, investigators have begun questioning the belief that wholesale transplantation of subsistences from the homeland occurred. A good example of this type of study is Shapiro's (1978) tests of Cleland's assertions that British food practices at Fort Michilimackinac mirrored such a transplantation. Shapiro's findings indicated that acculturative pressures in a situation removed from supply lines and ample provisioning closely followed aboriginal patterns.

In the early days of St. Augustine, supplies from Spain and other areas of New Spain were irregular necessitating a dependence upon aboriginal efforts to make up deficits. Through time, aboriginal populations decreased greatly. A mestizo population grew in size. As emigration continued, the town of St. Augustine developed. By 1763, the Spanish had been in the area for in excess of 200 years.

Cumbaa (1975) observes that the New World resident probably enjoyed a greater frequency of domestic animal meat than their Iberian relatives. Cows, pigs, and chickens were particularly important in St. Augustine households. It is conceivable that quantities of meat were available in St. Augustine by the late 18th century on a reasonably dependable basis. Spanish ranches in Florida were highly successful in cattle-raising efforts. It is also highly likely that archival records of the provisioning of the garrison exist for this period. Surely the local merchants functioned in provisioning this necessary, but captive audience.

#### IV. BUTCHERING PRACTICES

Cumbaa (1975, 1978) has shown attention to regularities in bone alteration with useful results. Some alterations are the result of butchering practices and the implications of the patterns of such marks can involve ethnic preferences, cuts of meat produced, and status availability to choice cuts of meat. Among these faunal assemblages, some regularities were noted.

Scapula: several instances of cutting below the articular surface (proximal) were noted. The cuts seem to proceed from a superior to inferior direction. Cuts are made on the dorsal aspect of the bone.

Vertebrae: Numerous vertebrae (cervical, thoracic, lumbar, and sacral) were noted. The centrum appears to have been longitudinally halved. While one would assume that a saw would be the tool preferred for such cutting, because of the cancellous nature of this bone, saw scars are not observable.

Ribs: ribs represented the most numerous bone evidencing butchering scars. Deep cuts to superficial cuts are apparent on rib fragments. Some are butchered from the ventral aspect, some from the dorsal. Some examples indicate a cutting through the articular area of the rib. Most numerous, however, are the fragments of rib which indicate a cutting blow and snapping of the bone.

Other alterations, probably resulting from butchering are: 1) tibiotarsus - on a fragment identified as Gallus gallus, cuts were visible along the distal articular surface. This probably represents disarticulation of the tarsometatarsus and foot. Since a single instance is recorded for the assemblages, it is not certain that this is a widely practiced technique. However, some of the comparative material exhibits similar scars suggesting that this is a typical butchering practice of long endurance. 2) apparent cut marks on bone fragments - perhaps from a cleaver or knife. These fragments are largely unidentifiable fragments probably assignable to Bos. 3) a radius cut at mid-diaphysis suggests disarticulation of the forehoof, an area of little dietary value in terms of muscle masses.

In general, almost all of the skeleton is present in the collection. Rib and vertebral fragments are most numerous and most commonly have butchering scars in evidence.

## V. AGE OF FAUNAL POPULATION

The population of animals (domesticate) chosen for the garrison food base seem to be largely subadult. Deciduous teeth are present. Few long bones seem to be fused. Few teeth evidence extensive tooth wear. The single chicken identified was a hen in laying condition. Medullary bone was evident in the tibio-tarsus suggesting that the hen was in excess of 6 months of age.

## VI. WORKED BONE

Two fragments of worked bone were recovered. Both were from the Ravelin. A partial (half) bone, single-eye, button was recovered from Test 2 and a flat, elongate, smoothed fragment from Test 1 was identified. These are from Field Specimen lots 105 and 89, respectively. No horn remains were identified suggesting butchering elsewhere, use of polled strains, or use of horn for other needs.

## VII. BURNED BONE

Burned bone is defined as bone that has an altered color state from association with heat. It is highly possible that many or most of the faunal material was heated but few evidenced color alteration. In the West Latrine sample, there were 126 examples out of 6,627 identified and quantified fragments. This represents only a 1.9% frequency. Ravelin Test 1 had 32 fragments out of a total of 2,287 for 1.3%. Ravelin Test 2 had 37 fragments out of a total of 6,901 fragments for .5%.

## VIII. SUMMARY AND CONCLUSIONS

An unusual subsistence pattern has been identified in this faunal assemblage. Rather than the expected combined use of local and imported resources observed in many St. Augustine sites, the Ravelin material from the Castillo de San Marcos ex-



hibits a very high dependence upon cow and pig. Several hypotheses are appropriate: 1) the sample is biased, 2) food practices evidence the achievement of a stable meat supply during this time from ranching activities, 3) this food pattern is status/rank related.

One more provenience from the Ravelin (Test 3) must be analyzed yet. A visual assessment suggests that the same types of findings will be supported by this sample. However, this will provide a larger sample from which to investigate some of the points noted above. Additionally, as the fort is stabilized and more excavation is undertaken, the overall sample will be useful in evaluating the garrison subsistence base in comparison with the private sector.

A study of the archives should certainly reveal records kept by the garrison relating to provisioning. Perhaps records of town merchants will be available. It is difficult to believe that an aspiring merchant class would not be interested in the rather permanent need of provisioning the military population.

When analysis of the Spring and Summer 1979 excavations is completed, perhaps evaluation of the feasibility of use of this sample for comparative purposes can be made. At this time, the sample is unusual and its integrity uncertain.

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	TEST 1 ZONE 4 HNL/FEAG	TEST 1 ZONE 5 OUTSIDE PLANT	TEST 1 ZONE 5 INSIDE PLANT	TEST 1 ZONE 6	TEST 1 ZONE 7	TEST 1 ZONE 8	TEST 1 ZONE 9	TEST 1 FEATHER 17	TEST 2 AREA 6, LEVEL 1	TEST 2 AREA 5	TEST 2 ZONE 6	TEST 2 AREA 6, LEVEL 2
	187	188	190	192	193	194	195	199	222	223	227	228
<i>Helicoverpa</i> sp.	2/19	1/5			1/5		1/5	1/5			1/2	
<i>Helicoverpa</i>	1/2					1/2						
<i>Helicoverpa</i>	1/5	1/1				2		5				
<i>Helicoverpa</i>	1/1										1/1	
<i>Helicoverpa</i>	1/2	1/2										
<i>Helicoverpa</i> , large	13	12			1							
<i>Helicoverpa</i>	46	29	1	4	5	1					6	
<i>Helicoverpa</i>	9	2			1	1		2			2	1
<i>Helicoverpa</i>	1/1	1/1										
<i>Helicoverpa</i>	1/3							1/3				
<i>Helicoverpa</i>	105	7	3	2	24	1	3	4			46	
<i>Helicoverpa</i>	1/2							1/1			1/1	
<i>Helicoverpa</i>	1/2										1/2	
<i>Helicoverpa</i> sp.	1/6	1/6										
<i>Helicoverpa</i>	9								5			4
<i>Helicoverpa</i> sp.	1/1				1/1							
<i>Helicoverpa</i> bipuncta	1/1											1/1
<i>Helicoverpa</i> sp.	1/2				1/2							
<i>Helicoverpa</i> dolus	2/16										1/5	1/1
<i>Helicoverpa</i>	1/1	1/1										
<i>Helicoverpa</i> smoke	1/2				1						1	
<i>Helicoverpa</i>	1/1				1							
<i>Helicoverpa</i>	1/1				1/1			1/1			1/2	
<i>Helicoverpa</i>	1/1	1/1										
<i>Helicoverpa</i>	6/45	1/2			1/6	1/1	1/5	1/5			2/45	
<i>Helicoverpa</i> saurus	1/2							1/1			1/1	
<i>Helicoverpa</i>	5/82	1/5	1/1	1/5	1/10	1/2	1/5	2/7	1/2		2/32	1/2
<i>Helicoverpa</i> mutans	2/10				1/2		1/2				1/6	
<i>Helicoverpa</i>	2/25				1/2						2/17	1/1
<i>Helicoverpa</i> sp.	2/25				1/1	1/2	1/4	1/5	1/1	1/1	2/11	
<i>Helicoverpa</i>	1/6	1/6										
<i>Helicoverpa</i> cf. <i>Winnian</i>	1/3	1/2										
<i>Helicoverpa</i> sp.	2/3										2/3	
<i>Helicoverpa</i> sp.	4/57						5/5	1/6			1/7	1/5
<i>Helicoverpa</i> sp.	6/26				2/2	1/1	2/9	2/10			5/5	1/1
<i>Helicoverpa</i> ciensis	3/10	1/2		1/2	1/2			1/1			1/2	1/2
<i>Helicoverpa</i> sp.	3/11	2/3			1/1	1/1	1/2	1/1				1/1

TABLE 1: DISTRIBUTION OF FAUNA - WEST LATRINE TESTS

	MM-IFRAC	TEST 1 ZONE 4	TEST 1 ZONE 5 OUTSIDE FEA 15	TEST 1 ZONE 5 INSIDE FEA 15	TEST 1 ZONE 6	TEST 1 ZONE 7	TEST 1 ZONE 8	TEST 1 ZONE 9	TEST 1 FEATURE 17	TEST 2 AREA 6, LEVEL 1	TEST 2 AREA 5	TEST 2 ZONE 6	TEST 2 AREA 6, LEVEL 2
127	128	129	130	131	132	133	134	135	136	222	223	224	225
Spiridula	2/5		1/1		1/2	2/5							
Archaeosaurus sp.	5/32	1/5				2/2	1/2	1/2	3/5			3/11	1/2
Mural sp.	14/289	1/2		1/1	1/1	2/4	3/12	4/34	4/44	1/1	1/2	0/132	3/15
Trichinurus sp.	12/150				1/3	2/6	1/2	3/32	5/48	1/3		2/112	1/4
Paralichthys sp.	8/345	1/12		1/2	1/7	1/28	1/2	2/31	2/35	1/6		4/136	2/29
Ossinus sp.	1/2							1/3				1/1	
Undulitichthys sp.	4/121	104	3	31	54	310	210	1201	1258	35	7	1366	352
Kenodites sp.	1/1											1/1	
Cassosoma sp.	4/2/1010								373/940				40/70
Montastraea sp.	29/88								24/32				5/16
Turris pinnatus	32/31								32/31				
Geukensia sp.	1/1								1/1				
Strombosia sp.	2/2								2/2				
Undulitichthys	122	65		8	11	24			5	1		7	1

		TEST 1 LEVEL 2	TEST 1 LEVEL 3	TEST 1 LEVEL 4	TEST 1 LEVEL 5	TEST 1 LEVEL 6	
	NUMBER	79	82	86	90	105	
Antia	1/2	1/2					
us norvegicus	1/1					1/1	
oductula	16	16					
scrofa	2/13	2/16	1/2	1/1	1/1	1/3	
taurus	1/5	1/3	1/2			1/6	
mmul laene	254	105	10	2	9	89	
mmul	264	234	43	9	13	65	
s	3	3					
lenidae	1/1	1/1					
uo	1/1	1/1					
ndrichius	2		1			1	
K. Neapoleon	1/1	1/1					
barhinidae	1/1	1/1					
dae	1/3	1/4	1/2				
re marinus	1/1	1/1					
ussoni sp.	1/6	1/6					
rius cromis	1/1	1/1					
ridae	1/2				1/1	1/1	
ii sp.	2/19	2/19	1/3		1/14	1/3	
olichthys sp	1/8	1/6	1/2				
anus s.	1/1					1/1	
dentifish	383	216	67	9	26	65	
apoda	1/1				1/1		
apes sp	1/1					1/1	
dentifish	1142	429	74	32	51	552 *	
stidines	3	2				1	

TABLE II: DISTRIBUTION OF FAUNA - RAVELIN, TEST 1

\* 1 worked



	RAVELIN	TEST 2 LEVEL 2	TEST 2 AREA 2	TEST 2 AREA 3	TEST 2 LEVEL 3	TEST 2 AREA 6	TEST 2 LEVEL 4	TEST 2 LEVEL 5	TEST 2 LEVEL 7	TEST 2 ZONE 4	
		84	87	88	89	91	94	99	108	151	
Reventia	2/5				1/3			1/2			
Rattus sp.	1/1		1/1								
Sus scrofa	1/11	1/2	1/2	1/1					1/1	1/5	
Bos taurus	4/10	1/3	1/1		1/6		1/3	1/4	1/13	3/66	
Mammalia cf. Bos	1/1						1/1				
Mammal Larva	8/4	61	41	=	92	12	14	101	127	350	
Hummal	1453	83	71	12	160	24	39	175	420	660	
Aves	16		1		4	1			3	7	
Ardeidae	1/5									1/5	
Gallus gallus	1/3 ♀									1/3 ♀	
Testudines	2								1	1	
Anura	2				2						
Buteo sp.	2/2				1/1			1/1			
Chondrichthys	10				4				2	4	
C. cf. Dasyatis	1/2									2	
Anidie	3/13				1/2	1/1	1/2	3/10	1/1	1/1	
Boare marinus	1/2								1/1	1/1	
Scorpaenidae	1/32	1/5							1	1/27	
Cynodont sp.	2/18	1/1			1/1	1/2		1/1		2/13	
Pogonius cingis	1/5	1/1			1/1		1/1	1/1		1/1	
Scorpaenidae sp.	2/2									2/2	
Curax sp.	1/4									1/4	
Sparidae	1/2	1/1			1/2			1/1	1/1	1/2	
Androsaurus sp.	3/7							2/2	1/4	1/1	
Musil sp.	2/51	1/3			1/3	1/2	1/1	1/1	1/4	1/37	
Perodiplosis sp.	1/5							1/2	1/1	1/2	
Unidentifed fish	524	31	13	3	60	110	19	42	85	231	
Menippes sp.	1/1										
Unidentifed	3550	250	105	53	726	114	113	303		1015	

TABLE III: DISTRIBUTION OF FAUNA - RAVELIN, TEST 2



TABLE IV: TEMPORAL ASSIGNMENT OF FIELD SPECIMENS FOR EACH PROVENIENCE

## 1. RAVELIN, TEST 1

<u>Number</u>	<u>Level/Location</u>	<u>Temporal Assignment</u>
78	Level 2	British Period fill ( <u>ca.</u> 1763-1780)
82	Level 3	
86	Level 4	
90	Level 5	
105	Level 6	

## 2. RAVELIN, TEST 2

<u>Number</u>	<u>Level/Location</u>	<u>Temporal Assignment</u>
84	Level 2	Spanish II fill ( <u>ca.</u> 1785-1820)
87	Area 2	
88	Area 3	
89	Level 3	
91	Area 6	
94	Level 4	
99	Level 5	
108	Level 7	
151	Zone 4	

## 3. WEST LATRINE, TEST 1

<u>Number</u>	<u>Level/Location</u>	<u>Temporal Assignment</u>
187	Zone 4	Spanish II fill ( <u>ca.</u> 1780-1820)
188	Zone 5, inside Feature #15	British fill ( <u>ca.</u> 1785)
190	Zone 5, outside Feature #15	British fill ( <u>ca.</u> 1785)
192	Zone 6	Prepared surface for Spanish I floor 3- <u>ca.</u> 1740
193	Zone 7	Pre-Castillo Timucua midden
194	Zone 8	
198	Zone 9	
199	Feature 17	Pre-Castillo Timucua trash pit

## 4. WEST LATRINE, TEST 2

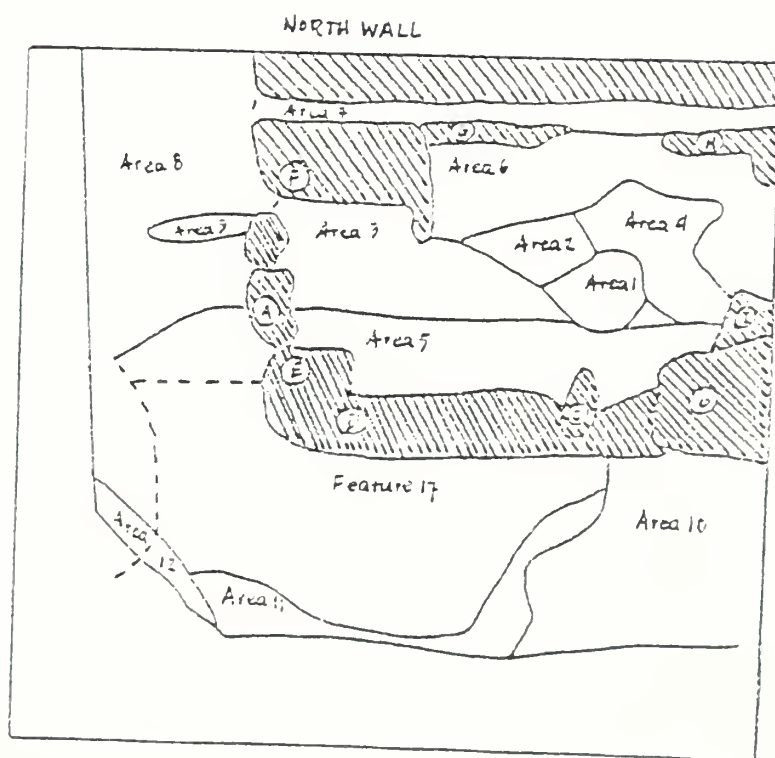
<u>Number</u>	<u>Level/Location</u>	<u>Temporal Assignment</u>
222	Area 6, Level 1	Pre-Castillo Timucua midden
223	Area 5	
227	Zone 6	
228	Area 6, Level 2	



TABLE V. FEATURE INFORMATION - WEST LATRINE

Feature #15: a rectangular coquina structure with an earthen center 0.4 meter below surface. Underlies Zone 3.

Feature #17: a circular pit with gently sloping sides noted on South side of Feature #15 and probably extending beneath. Material contains all non-domesticated remains consistent with aboriginal midden trash pit. Field Specimen #199 only.



Scale: 1:20 metric

Coquina \\\

TABLE VI: COMPOSITE FOR ALL PROVENIENCES

	WEST LATRINE							RAVELIN - TEST 1							RAVELIN - TEST 2							
	MNI	#	WEIGHT IN	%	(GRAMS)			MNI	#	WEIGHT IN	%	(GRAMS)			MNI	#	WEIGHT IN	%	(GRAMS)			
	#	%	FRAGMENTS	GRAMS	WEIGHT	BIOMASS	% BIOMASS	#	%	FRAGMENTS	GRAMS	WEIGHT	BIOMASS	% BIOMASS	#	%	FRAGMENTS	GRAMS	WEIGHT	BIOMASS	% BIOMASS	
<i>Sylvilagus</i> sp.	2	2.01	19	10.2	1.2	243.7	9.82															
<i>Zodion</i> sp.	1	1.01	2	0.4	0.49	18.2	.73	1	5.26	2	0.2	0.01	10.4	0.06	2	6.45	5	0.4	0.00	18.2		
<i>Rattus</i> sp.															1	3.22	1	0.2	0.00	10.4		
<i>Rattus norvegicus</i>								1	5.26	1	0.1	0.00	6.0	0.03								
<i>Anthodactylus</i>	1	1.01	8	10.2	1.2	243.7	9.82	1	5.26	16	76.1	5.0	1216.4	7.78								
<i>Sus scrofa</i>	1	1.01	1	1.6	0.19	55.3	2.22	2	10.52	23	197.4	13.0	2607.8	16.67	1	3.22	11	93.1	1.54	1429.4	3.3	
<i>Sus taurus</i>	1	1.01	2	56.8	6.95	962.6	36.79	1	5.26	15	150.1	10.29	2161.3	13.52	4	12.9	120	1259.5	20.94	11,485.7	24	
<i>Mammalia</i> cf. <i>Bos</i>															1	2.22	1	2.2	0.03	71.4		
<i>Mammalia</i> , Large			13	32.7	4.0	618.9	24.34			284	642.9	42.39	6706.7	42.9			814	3375.1	55.28	24,971.4	54	
<i>Mammal</i>			46	15.4	1.88	338.8	13.65			264	222.8	15.0	2034.4	16.3			1053	818.9	13.61	8,129.2	17	
	6	6.06	91	127.3	15.91	2481.2	99.93	6	31.56	705	1300.6	85.67	15,633.0	99.96	5	35.01	2605	5499.4	91.4	46,175.7	99	
<i>Aves</i>			3	2.0	0.24	38.3	25.38			3	0.3	0.01	6.8	100.00			16	3.4	0.05	62.1	34	
<i>Ardeidae</i>															1	3.22	5	3.1	0.05	57.1	32	
<i>Gavia immer</i>	1	1.01	1	6.1	0.74	105.8	70.11															
<i>Galus gallus</i>															1	3.22	3	3.2	0.05	58.8	33	
<i>Rallidae</i>	2	2.01	3	0.3	0.03	6.8	4.50															
	3	3.02	13	8.4	1.01	150.9	99.99			3	0.3	0.01	6.8	100.00	2	6.45	24	9.7	0.15	178.0	99	
<i>Teshedines</i>			105	26.6	3.25	284.8	28.93			3	1.5	0.09	41.4	32.09			2	0.5	0.00	19.8	100	
<i>Teshedines</i> cf. <i>Geopernis</i>			1	0.3	0.03	14.1	1.43															
<i>Chelonidae</i>	1	1.01	2	11.3	1.38	180.5	16.3	1	5.26	1	3.3	0.21	70.3	54.49								
<i>Knoastermidae</i>	1	1.01	2	0.3	0.03	14.1	1.43															
<i>Knoastermon</i> sp.	1	1.01	6	2.4	0.29	56.8	3.77															
<i>Emydidae</i>			9	2.0	0.24	50.3	5.1															
<i>Emys</i> sp.	1	1.01	1	1.5	0.18	41.4	4.2															
<i>Hydromys terrapin</i>	1	1.01	1	1.3	0.15	37.3	3.82															
<i>Hemipene</i> sp.	1	1.01	2	2.0	0.24	50.3	5.1															
<i>Geophemus polyphemus</i>	2	2.02	16	23.5	2.87	262.1	26.62															
<i>Salicidae</i>	1	1.01	1	0.2	0.02	2.7	.27															
Unidentified snake			2	0.7	0.08	9.6	.97															
<i>Anura</i>										1	20.1	0.00	217.3	13.4			2	0.1	0.00	—	—	—
<i>Bufo</i> sp.															2	6.45	2	20.2	0.00	—	—	—
	9	9.06	148	72.1	8.76	964.4	99.94	1	5.26	5	4.9	0.30	139.0	99.98			6	0.8	0.00	19.8	100	
<i>Chondrichthys</i>	1	1.01	1	0.2	0.02	31.5	15.78	1	5.26	2	20.3	0.01	244.7	41.89	1	3.22	10	0.8	0.01	103.9	39	
cf. <i>Desyatidae</i>															1	3.22	2	1.3	0.02	157.7	60	
cf. <i>Neophrion</i>								1	5.26	1	20.1	0.00	217.3	16.21								
<i>Desyatidae</i>	1	1.01	4	1.1	0.13	136.6	68.43															
<i>Carmerthinidae</i>	1	1.01	1	0.2	0.02	31.5	15.78	1	5.26	1	0.3	0.01	44.7	41.89								
	3	3.03	6	1.4	0.17	199.6	99.99	3	15.78	4	20.7	0.02	106.7	99.99	2	6.45	12	2.1	0.03	261.6	99	



TABLE VII: BIOMASS AND BIOMASS PERCENTAGE FOR ALL PROVENIENCES BY CLASS (IN GRAMS)

CLASS	WEST LATRINE		RAVELIN 1		RAVELIN 2	
	BIOMASS	% BIOMASS	BIOMASS	%BIOMASS	BIOMASS	% BIOMASS
MAMMALIA	2481.2	23.84	15,633.0	92.35	46,125.7	95.85
AVES	150.9	1.45	6.8	.04	178.0	.36
REPTILES	984.4	9.46	129.0	.70	19.8	.04
CHONDRICTHYES	199.6	1.91	106.7	.63	261.6	.54
OSTEICTHYES	6588.5	63.33	1051.8	6.21	1547.1	3.21
	<hr/> 10,404.6	<hr/> 99.98	<hr/> 16,927.3	<hr/> 99.93	<hr/> 48,132.2	<hr/> 99.96













